

Is Digital the Death of the Double Exposure?

By Mark Webster

If we discuss manipulated images today many photographers would now refer to digital images which have been improved or changed dramatically in Photoshop or some other wizard software. The power and scope of digital software is still in its infancy but picture manipulation is now within the grasp of anybody who is reasonably competent with a computer. Stunning pictures can be produced combining two or more images with a plethora of special effects, but I find that I frequently ask myself if it is not too easy now and maybe it is possible to make the proverbial silk purse from one or more pigs ears! It was not all that long ago that the underwater photography world was stunned by the first double exposure, which of course is a real time in camera effect on film, which soon became very popular and 'de rigeur' for international photosub competitions.

Those of us of a 'certain age' will remember sitting gobsmacked in judgement of the 1986 BSoUP (British Society of Underwater Photographers) 'Splash In' when Peter Scoones swept the board with a double exposure of a cup coral and reef in the background. Most of us in the audience knew immediately that there was something very unusual in the technique employed in this shot, but none of us could be sure until Peter very generously revealed his methods in, (coincidentally), the first issue of Underwater Photography Magazine (the printed predecessor to this now web based publication). Double exposure was a technique long employed in surface photography, and Peter may not have been the first to use it underwater, but his shot was stunning and goaded all of us to follow his example.

The same effect can now be produced quite easily in Photoshop in the comfort of your own home, with the luxury of time to perfect the blend of one or more shots and the choice of many images to produce the finished picture. But, whilst the end result is similar, for me the exercise is all too easy. Luddite I may be, but there is surely a far greater sense of achievement in planning and executing a successful double exposure in camera than from cutting and pasting from a variety of images on your hard disk?

Not all of our readers will know exactly where I am coming from, so for background



Even tropical locations like the Red Sea offer excellent opportunities to practice this technique. However, as conditions are generally much clearer and brighter you have to watch the exposure differential across the frame when you include the sun in the background exposure. Using a boat on the surface can help to block most of the direct sunlight. Nikon F801, Subal housing, 60mm micro and 16mm fish eye, Sea & Sea YS50, Fujichrome Velvia, f16 @ 1/250 and f8 @ 1/125.

perhaps I should recap on just how a double exposure is achieved using a film camera.

In essence you will be running the same film through your camera twice (or more) and selectively exposing an area of the film frame each time. In order to do this you must know the point at which the film started and you must be sure that each film frame is in register, i.e. subsequent exposures do not overlap into the next frame. This is easily achieved with a camera using mechanically actuated sprocket drive such as the Nikonos III, IVa, and V, or a manual SLR, e.g.



Flash and snoot - You will need to light the foreground or macro subject very selectively to leave the remainder of the frame underexposed. Snoots can be constructed from a variety of odds and ends - this one comprises part of a watering can rose and a piece of drainpipe!

Nikon F series, Pentax LX, Canon F1 etc. Some auto focus cameras are suitable for this whilst with others you can make use of the multiple exposure programme, but more of this later.

How it's done

So, step by step, this is what you do with a manual camera:

- * Open the camera back and watch the sprocket drive whilst you stroke the wind on lever and fire the shutter several times.
- * Now mark one of the sprocket teeth (top dead centre is best) and the camera body adjacent to it. White paint, Tippex or a coloured permanent marker is suitable.
- * Stroke the shutter several times again and watch that the two marks repeatedly line up. Some cameras will line up on each stroke of the wind on lever, others will be every second or third turn dependant on the drive mechanics.
- * Next load your film and once secured on the take up spool mark your film with a vertical line where the marked sprocket tooth engages the sprocket hole in the film leader. Use an indelible pen for this.
- * Now you can make your first series of exposures. Keep a careful note of frame numbers and subject positions.
- * You then rewind the film, taking care to leave the leader out, and reload following the same procedure. The film will now be registered in exactly the same position for the second or subsequent series of exposures.

Auto focus Cameras:

Taking a double exposure with an auto focus camera presents a little more of a challenge, dependant on which model/housing combination you have. Because the film transport is motor driven and not manually advanced it is more difficult to re-register the film. The camera still 'counts' the sprockets in order to advance the film precisely frame by frame, but the difficulty is in predicting where the counting will commence when you reload the film. My experience with Nikon cameras indicates that the important requirement is to keep the tension on the film/transport system and it will re-register. I am sure that there are a number of options, but here are three procedure which do work:

1) Fitting a small isolation switch to the camera battery pack - this allows you to stop the rewind process when the film counter shows zero, or at any other point. You can then crack the camera back open - without opening it completely - to zero the counter. The film remains attached to the take up spool and tension is retained. When you 're-load' the film it remains in register as it advances to frame 1.

2) The second method entails deceiving the camera to make it think that the film has rewound completely. To do this you cut off the film tail and replace it with a piece of tape, which runs to the take up spool. When you rewind the film it stops as soon as the last sprocket leaves the take up spool and the counter zeros. You can now advance the film again to frame 1 without opening the back whilst the tension is retained and the film remains in register.

3) The third method relies on the fact that the film transport system will re-register reliably after a set number of 'film sequences'. For this method you will need a sacrificial film and you can mark a sprocket. Running the film through the camera between 4-6 times you will find that the marked sprocket will return to a set position after a certain number of sequences. Check this a number of times to ensure that you have the correct number of sequences and then you can use your sacrificial film to re-register the transport system before reloading the film.

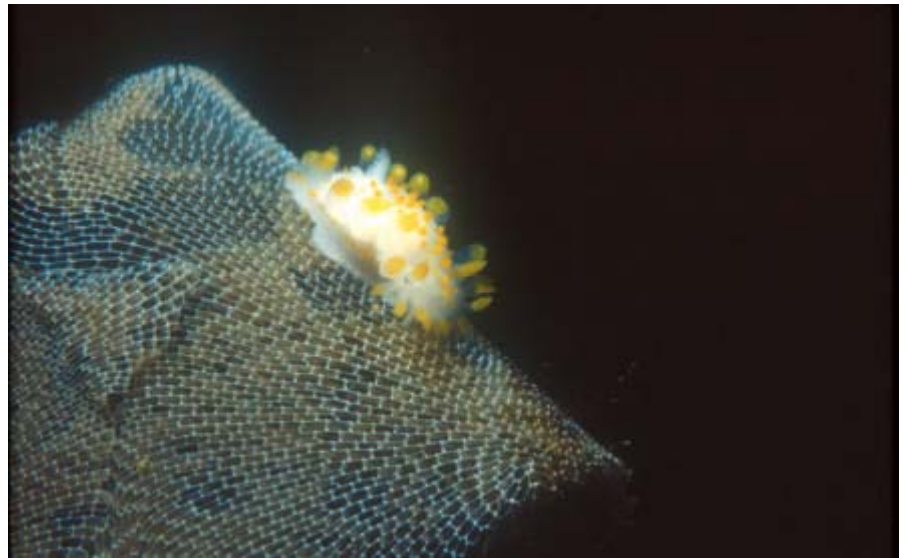
There are no doubt many other methods to fool the camera and ensure re-registration and it is a question of having the patience to play with your camera to learn its foibles. For many it may seem like too much trouble, so for you the introduction

of high quality zoom lenses may be the way to go if your housing gives you control over the multiple exposure control of your camera. The 17mm or 18mm-35mm zooms are a good choice, or you could try a 28-72mm or similar range, however the wide angle end of these standard zooms may not be wide enough. For most dome set ups a diopter is required to focus on the virtual image which has the added benefit of extreme close focussing at the long (35mm) end of the zoom. This allows you to focus on small subjects in part of the frame, light it selectively, and then zoom out to the wide end for the second exposure. By choosing your subjects carefully you can produce some very effective results, but you must keep your wits about you and remember to keep selecting the number of exposures you require with each frame and also remember which end of the zoom lens you should be using !

Composition:

The classic double exposure is a “forced perspective” image which combines a macro foreground shot with a sweeping wide angle background, thus giving a feeling of depth to the photograph and the illusion of marvellous visibility. This type of shot is especially useful in UK waters where on the whole visibility is rarely stunning!

To achieve this type of shot you will need both a macro system and a wide angle lens for your camera. Combining the two halves of the image without showing the “join” is the tricky part and as with all aspects of underwater photography requires patience, practice, a few rolls of



This series of four shots shows how a double exposure can create a dramatic difference to a commonplace subject, in this case a small nudibranch which are abundant in the spring and summer months in UK waters found feeding on bryozoans. Nikon F801, Subal housing, 60mm micro, Sea & Sea YS50, Fujichrome Velvia, f16 @ 1/125.



This shot in the series was also taken in Norway during the 1998 CMAS World Championships. The horizontal composition changes the feel of the image significantly. The combination of the nudibranch and diver's face represents an image you can see in your mind's eye, but is impossible to record with a single lens. Both elements of this composition have to be selectively lit with flash - a larger snoot has been used on the diver 'half' of the frame. Nikon F801, Subal housing, 60mm micro and 20mm, Sea & Sea YS50 and YS120, Fujichrome Velvia, f16 @ 1/250 and f16 @ 1/250.

film and usually a little disappointment on the way.

Photographers using housed SLR's do have a distinct advantage with this technique as they are able to directly view the

picture area and place subjects accurately. However, excellent results are also achievable with the Nikonos system and the basic exposure techniques are the same for both options.



The same species on kelp but this time with the addition of a sunburst on the second exposure. The vertical composition, strong diagonal line and apparent forced perspective gives the shot much greater impact and the illusion of good visibility and huge depth of field. Nikon F90X, Subal housing, 60mm micro and 16mm fish eye, Sea & Sea YS50, Fujichrome Velvia, f16 @ 1/250 and f11 @ 1/60.

Below is a guide to the foreground and background exposures which is not necessarily gospel as most photographers develop their own variations.

Foreground Exposures:

The easiest way to start is to pick a subject which will fill no more than half the bottom of the frame at a magnification of say 1:3, a cup coral or anemone is ideal. You must now be able to light this subject selectively with your flash gun so that the rest of the frame is unexposed. This is best done by making a “snoot” for your flash which will direct a cone of light at the subject. Snoot size can depend on subject size but I find that between 1/2”



A variation of the same composition to include a diver and boat on the surface with the sunburst. Including the diver in the distance increases the apparent depth of field and illusion of good visibility. This shot was taken in Norway during the 1998 CMAS World Championships when visibility was anything but perfect. Nikon F801, Subal housing, 60mm micro and 16mm fish eye, Sea & Sea YS50, Fujichrome Velvia, f16 @ 1/250 and f8 @ 1/30.

and 1” is ideal for most applications. This will obviously affect the power output of the flash generally by a couple of stops - you will find TTL generally does not work. If your camera has the option of fast synchronisation speeds (e.g. 250th of a second) then use it as this will help keep the background dark. Now make a series of exposures for the foreground bracketing with both aperture and flash distance and vary the position of the flash. Keep a note of your positions and apertures for future reference. Do not be afraid to use the whole film on this, perhaps choosing one or two other foreground subjects, as you will find initially that the results are unpredictable. On completion return to the real world and rewind your film.



Diving in tropical waters presents a huge variety of macro subjects for the foreground and all sorts of alternatives for the background. In this case the format is horizontal and a table coral has been used to shield the sun and provide a dark silhouette background which contrasts well with the whip coral and goby. Nikon F801, Subal housing, 60mm micro and 16mm fish eye, Sea & Sea YS50, Elitechrome 100, f16 @ 1/250 and f16 @ 1/60.

Background Exposures:

Having re-registered your film fit your wide angle lens, which really needs to be 20mm or wider for the most pleasing results. Remove your flash gun and return to the water. Remember the orientation of your original macro shots, which leaves you the top half of the frame to fill with the wide angle view. The trick now is to ensure that you do not re-expose the bottom half of the frame. The best way to approach this is to find an area of overhanging reef or kelp which will “cover” the bottom half of the frame. You can then meter the two halves of the frame and ensure that there is at least a 2-3 stop difference between them, i.e. you are underexposing the bottom half of the frame. Now you can make the series of background exposures including perhaps a diver, the sun or a passing fish shoal. Vary the composition and move around to find varying overhangs and backgrounds. Again keep a note of what you do.

Your first attempts with this technique may not be a resounding success, but perseverance will bring repeatable results and some very pleasing images. It is sometimes helpful to sketch up an idea before you go into the water and also keep a note of subject positions, lighting angles and frame numbers on a scratch board. Once you have mastered the basics you can begin to experiment with horizontal compositions, three or four exposures on a frame and variations in lighting techniques. The only limits are your patience and imagination!

This style of creative photography does not appeal to all, indeed some regard it as not being



This is the same fish and coral from the previous shot. The format has been changed to vertical and the background changed to the bows of a shipwreck. Which makes the most effective composition is down to personal taste. Nikon F801, Subal housing, 60mm micro and 16mm fish eye, Sea & Sea YS50, Elitechrome 100, f16 @ 1/250 and f16 @ 1/60.

true underwater photography as it often does not include the patient stalking of wildlife but more often consists of pre-planned set piece shots. But you should not immediately dismiss these techniques even if you feel that your interests lie with "straight" photography. Experimenting with this offbeat technique will develop your compositional skills and teach you a lot about controlling light and assessing correct exposure.

So, is digital manipulation going to kill off the double exposure? I for one hope not - it is great fun to experiment with these techniques, stretch yourself a little mentally and perhaps make something more from a potentially uninspiring dive

site. But if the prospect of all this technical manoeuvring in and out of the water is just too much, then at least save some of your less than perfect shots for those quiet evenings in with Photoshop!



Mark Webster
www.photec.co.uk

Mark Webster



Mark Webster is the author of 'The Art and Technique of Underwater Photography' (published by Fountain Press) and Diving and Snorkeling Belize (Lonely Planet). He hosts regular photography workshops overseas - dates for 2004 include Bonaire (January) and the Red Sea (June and October).

Visit Mark's website www.photec.co.uk for further information. Please contact Oonasdivers for full tour details and bookings: www.oonasdivers.com
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The Inon T Flash. From Ocean Optics.

See UWP 11 for Mark Webster's in depth review www.uwpmag.com



Ocean Optics

13 Northumberland Avenue, London WC2N 5AQ
Tel 44 (0)20 7930 8408 Fax 44 (0)20 7839 6148
E mail optics@oceanoptics.co.uk

www.oceanoptics.co.uk