

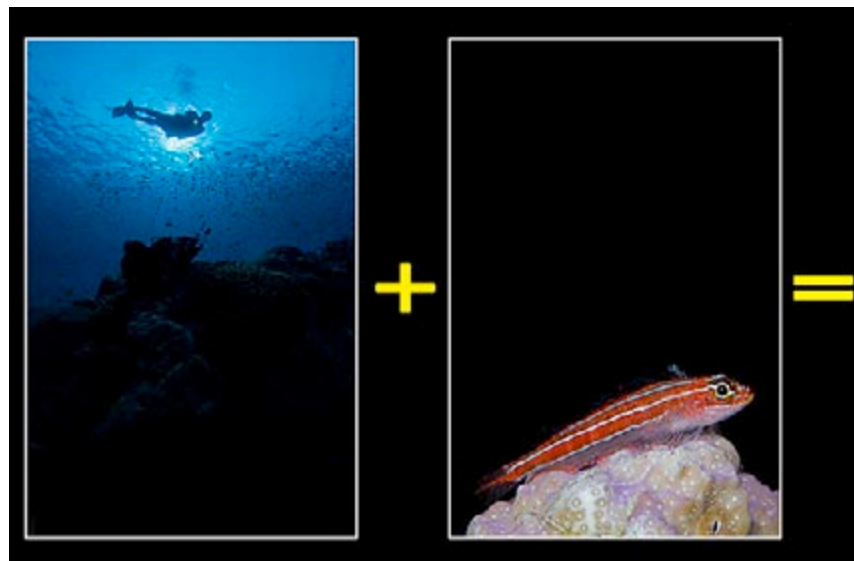
Digital Double Exposures

By Alex Mustard

Double exposures are photographs where we expose the same frame twice, overlaying two separate scenes to create a cohesive and dramatic final image. The technique was popular special effect when film dominated beneath the waves. Peter Rowlands' editorial in the first issue of the original printed Underwater Photography Magazine (from 1987) stated "multiple imaging is the most significant technique to affect underwater photography for a long time".

In 2003, Mark Webster wrote in UWP Issue 14 that he feared Photoshop would spell the end for the technique? He was proved right. Photoshop allows us to combine any images we wish, with precision and control that an in-camera double exposer could only dream of. Surely there is no point in resurrecting such an outdated technique with digital cameras? I decided to find out.

How it was done. The first stage was shooting the background, metering on the blue water and thus rendering the reef at the bottom of the frame in silhouette. Then I shot the triplefin with a macro lens and single strobe. I searched for several minutes before finding one of these common little fish in a suitable pose against open water. A fast shutter speed and small aperture meant the open water was recorded as black. The two frames were then combined in camera using the Image Overlay function. The resulting image is a RAW file, with all the adjustability associated with that format. Nikon D2X + Subal Housing. Frame 1: Tokina 10-17mm, available light, 1/125th @ F11. Frame 2: Nikon 105mm VR, Subtronic Alpha Pro, 1/250th @ F20.



Is it worth it? Double exposures provide a way of creating dramatic forced perspective and limitless depth of field in-camera. But today, with Photoshop manipulation just a few mouse clicks away, is there any benefit in resurrecting this classic in-camera

One of the biggest challenges as an underwater photographer is trying something new. It surely comes from our limited time in our chosen realm. Each dive is precious, we had better stick to the tried and tested. I have always believed that creative and innovative underwater photography can only happen when we dive in the right way. Free your diving and your photography will follow... or something like that.

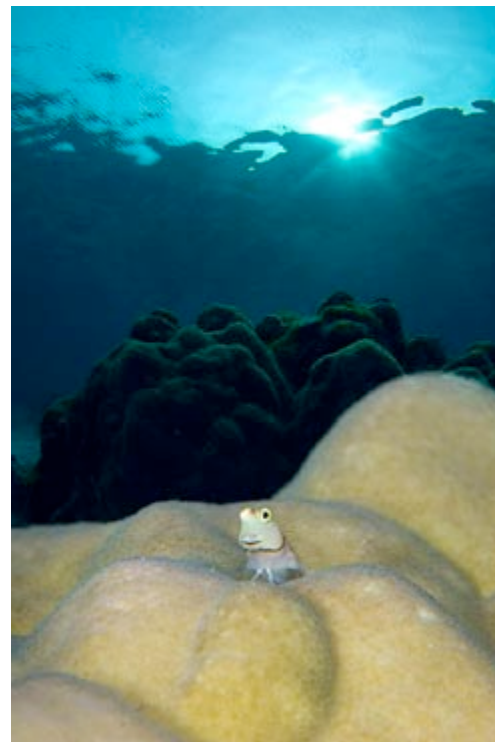
Trying double exposures on digital has been on my mind for ages, but it wasn't until I immersed myself in total diving freedom that I got round to it. I am writing this article from a liveaboard charter in Thailand, with the Bafta and Emmy winning cameraman Peter Scoones. For the benefit of Peter's sequence building we are diving the same dive sites repeatedly. Not just two or three times, but 10 or 20 times. Buddy diving is tolerated, but not encouraged. The pool is open all day. The boat does not move we just go in and out when we choose. Exactly the type of diving required for experimenting.

There are only 8 of us on board and fuelled with a few glasses of wine, after dinner conversation has been fast paced and opinionated. One evening I brought up the subject of trying double exposures on digital and Peter explained how they really

became popular underwater when the Pentax LX came out in the early 1980s. This camera allowed you to accurately reload the film so that the images from the second dive exactly overlaid those from the first dive. Scoones is an ideal source for info on double exposures; 21 years ago he wrote the article on the technique that appeared in that first issue of the printed UP Magazine.

From the late 1980s and on into the 1990s double exposing was common, allowing photographers to combine macro foregrounds with wide angle backgrounds to create infinite depth of field images with dramatically forced perspective. Images that were impossible to take in a single shot. Perhaps the most elaborate extrapolation of the technique was in Fotosubs (on-the-day underwater photography competitions) where photographers would use elaborate masks to build contrived prize-winning pictures from three, four, five or more exposures.

Double exposures may have fallen by the wayside in these days of Photoshop, but they are also much less of a fuss with a digital camera than they were on film. There is no need to rewind, mark and reload the film. There is also no need to keep note of which subject we shot on which frame. Nikon digital SLRs have Image Overlay function which enables



Controlling focus. In this image of the blenny I have included too much foreground and the coral behind the fish is out of focus. However the background is in focus, resulting in two points of focus within the frame and a confusing perspective. Simple, single plane foregrounds tend to work best in double exposures. Nikon D2X + Subal Housing. Frame 1: Tokina 10-17mm, available light, 1/100th @ F8. Frame 2: Nikon 105mm VR, Subtronic Alpha Pro, 1/250th @ F16.



Plan, plan and plan. Perhaps the biggest challenge with double exposures is the need to visualise the final image before collecting the constituent parts. In this case a yellow, orange or red Christmas tree worm would have looked much nicer against the blue background. When shooting the foreground section of the images, the blue Christmas tree worm looked great. Nikon D2X + Subal Housing. Frame 1: Tokina 10-17mm, available light, 1/125th @ F11. Frame 2: Sigma 150mm + Canon 500D dioptre, Subtronic Alpha Pro, 1/250th @ F14.



(Left) Image Overlay. This is Nikon's in camera software for combining images. It allows you to select which foreground you want to combine with which background and to adjust the gain of each. You can even zoom in to check the details of the double exposure before saving it. The main restriction is that you cannot rotate images. This is much more user friendly than using multiple exposure.

(Right) Model on demand. This is a double exposure of two wide angle shots, which is more challenging because of the difficulty of getting a black background when shooting a wide angle foreground; I had to stop down to F25. I did not have a model with me when shooting the backlit crinoid, however I was able to add one in-camera using a double exposure. This is a shot that I could have created in a single shot, but instead used my new in-camera model facility! Nikon D2X + Subal Housing. Frame 1: Tokina 10-17mm, available light, 1/100th @ F8. Frame 2: Tokina 10-17mm, 3x Subtronic Alpha Pro, 1/250th @ F25.



us to browse then combine any two frames on the memory card to create a new RAW file (I am not sure if Canon cameras have this feature). The LCD screen displays the result immediately, allowing us to re-shoot if required. The camera will also allow us to adjust the gain between the two images, to vary their contribution to the final frame. The main thing to watch is that the digital images cannot be rotated, so you must keep your camera in the same orientation.

It is also possible to make double exposures using the Multiple Exposure function, as it was with film cameras, but this is not that useful underwater because, obviously, we cannot change lenses between consecutive shots.

The key to good double exposures has always been planning - to ensure that your two halves combine to a pleasing whole. It can be quite a brain-drain. As Peter Scoones wrote in his original article "Life is not made any easier by trying to produce results this way. Instead of having to frame and

compose one subject correctly there are now two to cope with."

When taking double exposures the black areas of the images are the parts that become transparent when images are combined. So it is crucial to make sure that we control the black areas of the frame exactly to avoid ghosting over the details we want to show. The simplest approach is to divide the frame in half and to shoot two images with the black areas filling opposite halves of the frame.

The technique is most easily followed by going through an example. My intention was to recreate the classic double exposure look of macro foreground with a wide angle background in a vertical image. Dive one was for backgrounds and

I used the Tokina 10-17mm fisheye and persuaded our dive guide, John, to pose for me. Shooting without strobes it only took five minutes and had a variety of silhouetted backgrounds, with black shadows in the lower half of the frame ready for my macro subjects. I took the photos in the late afternoon, when the sun was streaming down the reef,. I exposed for the open water and the reef in the lower half of the frame was in dark silhouette.



Subtle combinations. This image is a crop of the double exposure of the triplefin. Note the details of the background visible through the dorsal fins of the fish. The subtle and natural combining of some images as a result of double exposures would be challenging and time consuming to reproduce in Photoshop. Nikon D2X + Subal Housing. Frame 1: Tokina 10-17mm, available light, 1/125th @ F11. Frame 2: Nikon 105mm VR, Subtronic Alpha Pro, 1/250th @ F20.

Then on the next dive I jumped in to shoot the macro foregrounds, I used the Nikon 105mm VR and searched for subjects that I could place low in the frame and isolate against open water to leave the top half of the frame black. It is best to plan around common subjects, as finding one that can be photographed from the right angle is essential for success. I also used a fast shutter speed and careful aiming of a single strobe to avoid lighting anything else in the frame. Many photographers favoured snoots for exact control of the lighting of the macro shots in double exposures, which seems like good advice. Unfortunately I don't have one with me in

Thailand.

As I began to shoot macro foregrounds I started trying the overlays. It only takes a couple of seconds to process the image – and if one background does not work you can just try another! It is well worth trying a few overlays while underwater as it quickly teaches you the types of images that work best. After trying a few I decided to re-shoot my foregrounds trying to avoid any out of focus areas behind the main subject, to maintain the limitless depth of field look I was after. The images look a bit weird where the foreground is in focus, the middle ground is blurred and the background is sharp again!

The technique is easy to implement and came in useful later in the trip when I was in need of a model. I have also been experimenting with backlighting crinoids and soft corals and while the images were fine technically I felt that they looked unfinished as photographs. One of the downsides of solo diving is that there is nobody around to persuade to pose when you need them, but luckily I still had those backgrounds with John still on my camera. So I stopped down, increased my shutter speed and photographed the backlit crinoids with black backgrounds in the middle of the day. Then added the backgrounds in camera. It took a few attempts to get the compositions correct, it would have been much easier if I had had someone to pose, but using the image overlay function I was able to get the shots I wanted there and then.

So, in conclusion I would say that the technique works well on digital and is much more user friendly than on film. To my eyes the resulting forced perspective images do look contrived and a little dated, given their popularity 10-20 years ago. But everyone on board seems to really like their

dramatic perspective and the opportunity to see shots like these again. In addition, the images have been an interesting challenge and great fun to take.

But the big question remains is there any point in doing them when the shot could so easily be reproduced in Photoshop? Most of the time, probably not, but there are a couple of exceptions. It is certainly a useful technique for On-The-Day or other competitions that do not allow image manipulation in Photoshop. Perhaps more interesting is that when I looked in detail at a couple of the images I noticed that the subtleties of the overlay could not be achieved easily in Photoshop. Have a look at the crop of the triplefin photograph and note the detail of the overlay where the background details of the reef are still visible through the semi-transparent dorsal fins of the fish. OK, so most viewers would never notice this, but this natural look would be very time consuming and much less fun to do in Photoshop. Maybe there is some use in reviving this old technique after all?

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A photograph of a diver in a black wetsuit and yellow buoyancy compensator, holding a camera. The diver is positioned next to a large, branching, orange-colored coral structure. The background is a clear blue underwater environment.

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