

Shedding light on the D100

by Alexander Mustard

The Nikon D100 is big news and in the last couple of issues of UWP it and its various housings have been the subject of three reviews! But while we have seen lots of pictures of cameras and housings there has been a bit of a lack of underwater images taken by the camera under the sort of conditions it will see most of its use - a typical diving holiday! One aim of this article is to correct that. However the main goal of this article is to shed a bit more light onto the main problem that is concerning current and potential D100 users, that of lighting pictures...

The problem is simple - at present "there are NO underwater strobes that offer Through-The-Lens (TTL) flash metering with Nikon's D100 (or D1 series) camera!" Why is this? The problem lies with the cameras, they cannot perform standard Nikon TTL flash control, so as an alternative Nikon has developed DTTL. DTTL is NOT the same as TTL and all existing underwater flashes are designed for TTL. The only guns that will do DTTL are Nikon's land guns - the SB28DX, SB50DX and SB80DX. And these aren't waterproof!

Nikon's standard TTL (with a modern Nikon SLR and Nikon Speedlight) works by monitoring the light coming in through the lens (TTL) using BOTH pre-flashes in the microseconds between the kill button being pressed and the shutter opening AND during the actual flash



These hamlets are spawning (it is possible to see the eggs next to the fish acting as a female's anal fin). To catch a moment like this you may only get one chance and DTTL is essential to achieve a correct exposure. Nikon D100. Sigma 28-70mm @ 55mm. Subal D10. SB80DX. 1/180th @ f27. (ISO 200)

exposure once the shutter is open. The pre-flashes are used to predict the amount of light an exposure will require, AND then this is fine tuned while the shutter is open by monitoring the amount of light reflecting back off the film. Once enough light to produce a correct exposure has reached the film the camera quenches the light output from the flash.

Submersible strobes are not as sophisticated as modern Nikon Speedlights and cannot do the pre-flashes. Luckily our film cameras are pretty smart and realize this and revert to TTL without the pre-flashes. Problem solved!

Well, the problem was solved until the D1 and then

D100 came along. The CCDs in Nikon's digital SLRs do not reflect light in the same way as film. This means that they cannot perform TTL metering while the shutter is open (which relies on monitoring the light reflecting off the film). As a result all flash metering is done using only the pre-flashes. In practice this works fine with the SB28DX, SB50DX and SB80DX, but underwater strobes cannot do the pre-flashes. So can't do DTTL.

At present there are a number of "digital" underwater strobes on the market, but, at the time of writing, none of these offer DTTL (despite sometimes confusing naming, such as Sea and Sea's YS90 DX). Hopefully things will change on this front



DTTL is better than manual flash for stalking fish when camera to subject distances (and thus required strobe power) is constantly changing. Nikon D100. Sigma 28-70mm @ 65mm. Subal D10. SB80DX. 1/60th @ f16. (ISO 200)

and DTTL underwater strobes will be available soon. But Nikon so far has been unwilling to tell independent strobe manufacturers how DTTL works. One of the golden rules of diving safely is "don't hold your breath!". That applies now!

Solutions

There are several ways to overcome this problem and in the rest of this article I will pass on my experiences with each method. The simplest approach is to shoot manual flash exposures. For those coming to the D100 from a 35mm SLR, like me, the idea of giving up TTL seems crazy. But shooting manual flash is very easy with a digital camera because you can immediately check your exposures (with image review) and change your settings and re-shoot if required.

Furthermore with digital pictures it is easy to



Manual flash is best for wide angle and easy to use. I used image review to alter the power of my two strobes to get the most even lighting (the top one was on 1/4 power, the bottom one on 1/16). Nikon D100. Nikkor 16mm. Subal D10. 2 x Subtronic Alphas. 1/30th @ f13 (ISO 200).

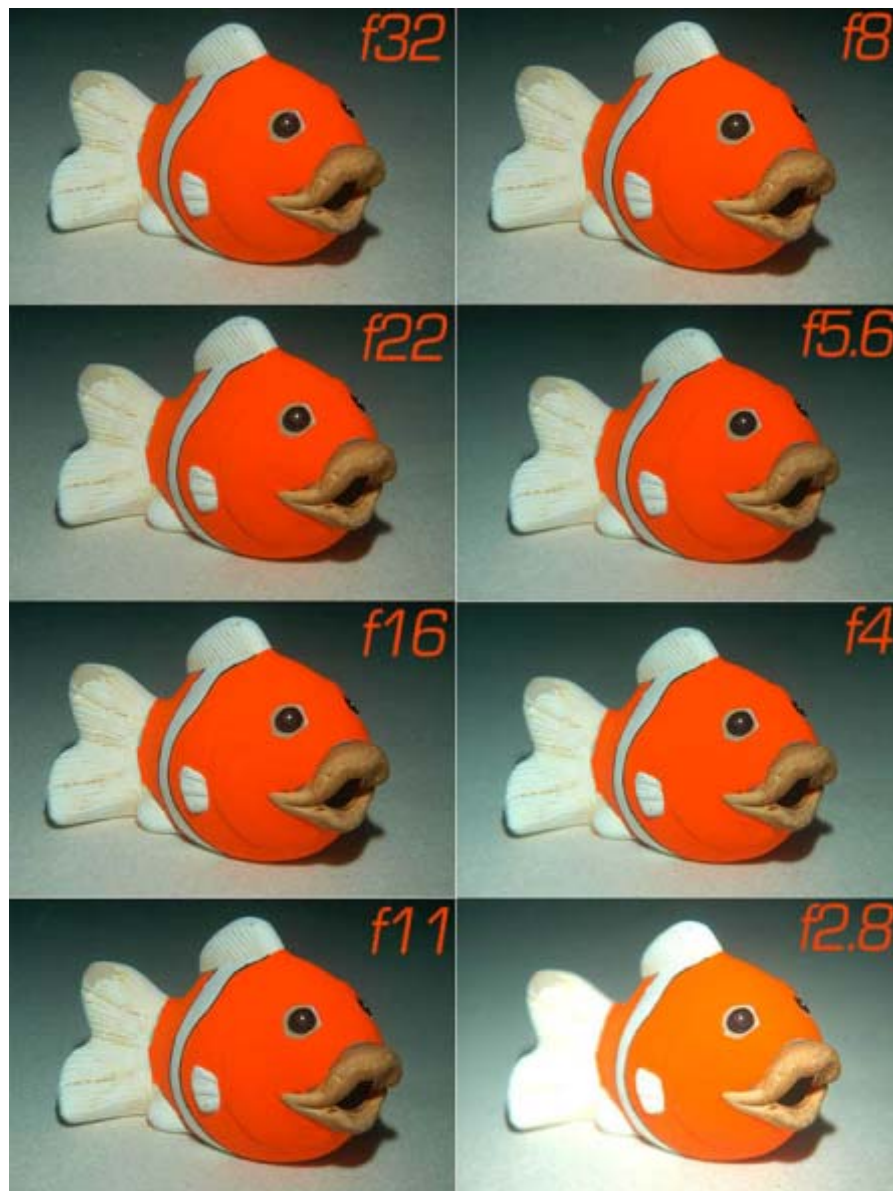
make quite substantial corrections to the exposure of the resulting image on the computer without any significant loss in image quality. This is particularly true in the NEF RAW format, which I use exclusively underwater. In this respect digital is much more like shooting on print film than on slide film. It is much less important what your negative/RAW file is like, what matters is your final print or full resolution TIFF file. Most photographers who have tried digital SLRs underwater are more than content shooting with only manual control over their flashguns (see Charles Hood's article in UWP 12). For wide angle this is without question the best solution; many wide angle scenes require complex lighting and with manual strobes and instant image review we can achieve this easily. When shooting scenics with the D100 I often end up with my two flashes set on very different powers to achieve the most pleasing lighting.

Because manual flash exposure is so easy and offers more control than TTL metering many D100 housings are supplied configured to only fire strobes in manual (with only two of the 5 standard flash connectors actually wired up). This means we can plug in our existing Nikonos/Nikon compatible guns, using standard Nikonos connectors, and they will work on manual. But they will not TTL.

An ideal manual strobe (or strobes) for digital is one with lots of power settings which is the easiest way to adjust artificial light to get the correct exposure and colour. But such strobes are not essential and I have happily shot the D100 with a Sea and Sea YS30 which has only one power setting - ON! With the YS30 I cannot vary the flash power output, but I can control the light recorded by the camera by changing the flash to subject distance and by adjusting the lens's aperture.

If, like me, you like to photograph marine life behaviour where we often only get one moment to get the shot or just can't face the idea of going down without TTL as your buddy then you only have one option. You have to house a SB28DX, SB50DX or SB80DX. In my opinion the SB80DX is the best of the DTTL compatible guns because it will fit in existing housings for older Nikon Speedlights plus several manufacturers are working on or have already produced a new housing for it.

To make the housed SB80DX work with the D100 all of the five flash connectors must be wired up. I have found DTTL performance is very good even



DTTL produced reliably metered flash over 7 stops. Nikon D100. Sigma 28-70mm @ 44mm. Subal D10. SB80DX. I was able to get reliable DTTL metered flash over 7 stops (f32-f4) without moving strobe or camera. Excellent. Exposures were all at 1/160th @ apertures: f32, f22, f16, f11, f8, f5.6, f4 & f2.8 (ISO 200).

on tricky silvery subjects and in pool tests it was capable of producing correctly metered flash exposures over 7 stops of aperture. Furthermore my D100 in its Subal coat, fitted with a flat port and a housed SB80DX is truly neutral - and although just about every underwater camera I have ever tried claims to be neutral this is the only I have been able to let go of and it just sits there next to me! Its handling is obviously fantastic.

However, the SB80DX is not the complete solution for the D100. First the light beam of the SB80DX does not have sufficient coverage for ultra-wide lenses, such as the Fisheye, 14mm or the new 12-24mm Nikkors. Furthermore, when a D100 housing is wired up to shoot with a SB80DX it will not (as Charles Hood pointed out in UWP 12) fire any UW strobes, even with them set to manual. This is because with full



The D100 is very capable of producing colourful images without any strobes. This picture was taken in available light using a red filter over the lens. Nikon D100. Nikkor 16mm. Subal D10. 40CC Red filter. Grey card and custom white balance. 1/100th @ f9.5. (ISO 200)

The author very happy with his neutral D100. Photo by Giles Shaxted

communication down all 5 flash wires, the camera detects it is not a proper Nikon flash and refuses to play ball. On the D100 you cannot even take a picture. The way to solve this problem is to disconnect the wires to the three small connectors on the camera's hotshoe, just leaving the manual trigger and ground connected. Housing manufacturer's are starting to address this problem (see Peter Rowland's Nexus D100 review in UWP 12) making it easier to switch between a DTTL gun and a manual UW strobe.

So my approach is to use the SB80DX for macro, fish portraits and behaviour (28-70mm, 60mm and 105mm) where DTTL has the reactions to catch that moment of behaviour or the pose I want. Then for wide angle I block the three connectors and switch to a pair of Subtronic Alphas, both wired into the housing, and shoot them on manual for wide angle (16mm and 17-35mm). For most D100 users their choices will be determined by the strobes they already own; I already had the Subtronics for my 35mm camera and also had an old tubular flash housing, which luckily the SB80DX fitted into. But from my experiences I can reassure those interested in the D100 that manual flash is easy and DTTL is very reliable underwater. End of story?

Well, not quite. There is another way to get colourful underwater images with the D100 without any of the above, and that is to use colour correction filters. Combining a coloured filter (such as a URPro, see "Filter Fulfilment" in UWP



11) with a custom set white balance, tuned in situ with a grey card, the D100 produces great colours without any of the fuss of blocking connectors, DTTL and manual flash. But this is a story for another issue of UWP...

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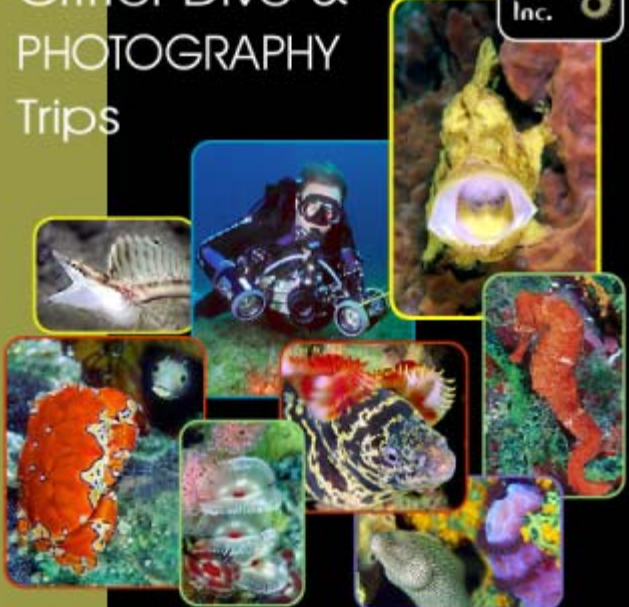
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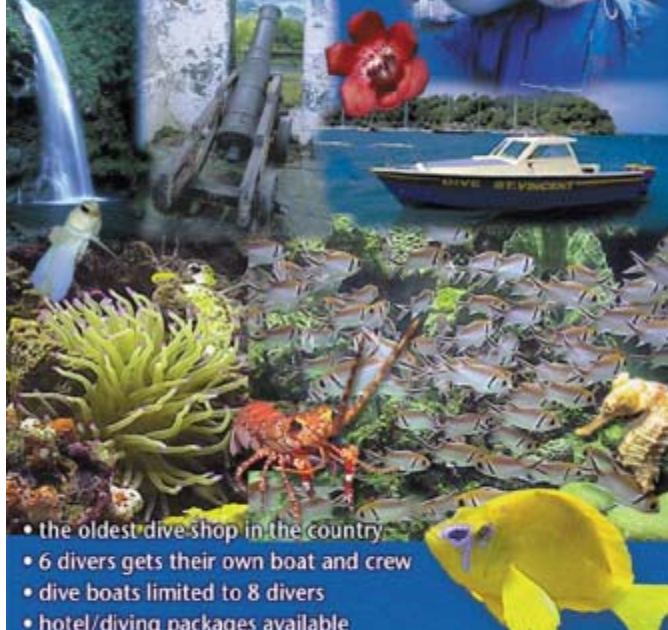
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