

A new look at macro lighting

By Aaron Wong

As we all should already know, strobes produce white light (5400 to 5600 Kelvin), and we use strobes underwater for two main reasons. To illuminate an object, or to replace colors that would otherwise be absorbed. It's as simple as that, or is it? As a commercial photographer, I've spent nearly a decade lighting my subjects from every physical angle possible and there's a lot more to lighting than meets the eye.

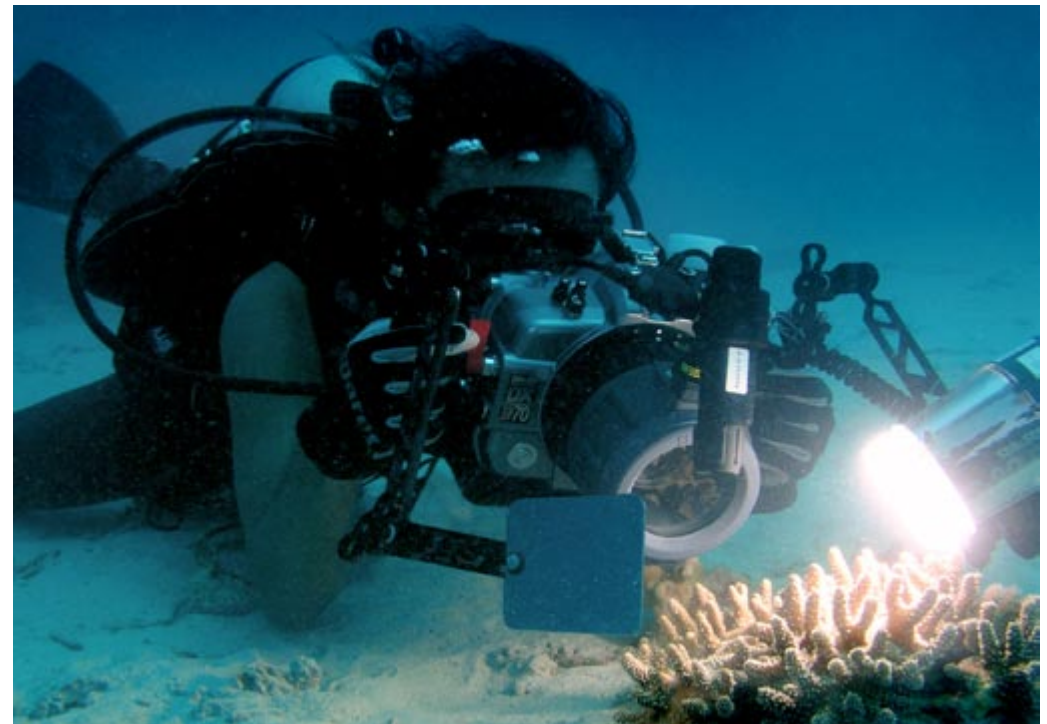
The truth is, there are many techniques commercial photographers use to achieve those glossy product advertisements you see in magazines (think about those 'mood' shots of hand phones and watches) They were of course done in a studio, but here's the question. Why can't we use some of the same approach in underwater photography? Besides it's size and output, studio strobes are no different. They all produce white light, it's how we use them that makes the difference.

With that in mind, I would like to share with you two simple lighting techniques commonly used

by commercial photographers called 'bounce' and 'cutting'. It's nothing new to photography, just that it's hardly been used underwater. (Even if some divers do use them, they are sure as hell are not sharing the secret!)

BOUNCE LIGHT.

As the name implies, you basically 'bounce' the light from your strobe. Light travels in a straight line, and when it hits a reflective surface it bounces back. I've developed a bounce plate that does just that. (Well, develop is a big word to use for such a small thing!) A bounce plate is basically a small piece of metal or plastic (your slate would work fine.) that is used to reflect the light back to the shadow areas that would otherwise be too dark. You simply place the plate at the opposite direction of your strobe, e.g. if your strobe light is coming from the right, place your plate on the left side of the subject. Your strobe in this case is the key light and the bounce becomes



Here's a picture of the bounce plate in action. Notice how the bounce plate fills in the shadow areas created by the strobe on the corals. The areas that did not receive the bounce remain quite dark.

I shot this nudibranch with 1 strobe and a bounce plate placed on the right. The matt side is used to produce a soft fill.

Equipment: Nikon D70 in a Sea n Sea housing with 1 YS 90DX, bounce plate and 60mm macro lens Exposure: 1/125 at f22





The extreme close up of this shot made it possible for me to bring the bounce plate a lot closer (about 1.5 inches) without it coming into frame. I was able to get quite a strong fill with the polished reflective side of my bounce plate.

Equipment: Nikon D70 in a Sea n Sea housing with 1 YS 90DX, bounce plate and 105mm macro lens
Exposure: 1/125 at f32

something like a fill. (This is great for those who only have one strobe.) The softness of the bounce can be controlled by using different materials. A white plastic (like your slate.) gives a soft fill while a reflective piece of metal would produce a much harder bounce.

The challenge is to get the plate in the right angle. (It's like trying to reflect the sun into your friend's eyes with a mirror!) The trick is to get close. We are talking about macro photography here, so get as close as you can. I usually place my plate about 3 inches or less from my subject. At this distance, a matt surface plate would give you a fill of about 1.5 to 2 stops under from your key light. That will give you an nice overall exposure, but you can always move your plate further back for a



This shot was done with a single strobe (from the right) and a larger bounce plate. (about A5 size, from the left) The larger plate created an even fill over a large area. I was also able to position my bounce plate in between the sponges to get a proper fill. Something a strobe can't always do.

Equipment: Olympus C5050 in Olympus PT-015 housing with 1 YS 90DX and large bounce plate.
Exposure: 1/125 at f8.

darker shadow.

Now for the 'mood' kind of lighting we talked about. (Remember those watch and hand phone ads?) The best way to achieve this is to do flash dominated shots. That means all the light you see in the picture comes from your strobe. Leave the ambient light out. (Just like studio shots, ambient light is hardly ever used.) The trick is to use a higher f-stop, (f/22 and above or whatever your camera can support.) and a faster shutter speed. (1/125 or faster, depending on what higher speed your camera can sync.) With settings like these, ambient light is almost non-existent, so you will need a strobe with a little juice. The YS 90 by Sea & Sea

is great. Smaller strobes work just as well but you have to get them closer. Remember the key word in macro... Closer!

Getting it right takes a fair share of trial and error. Not a problem for digital users, but to those good old film guys, all I can say is 'good luck'! Take a few shots at different plate angles. Remember, a few frames is a small price to pay for a great shot. Or better still try it on land or in a pool just to get a feel for it. Trust me, you don't want to waste precious time figuring it out while diving in the Maldives!

For the lazy few, you can drill a hole and mount your plate on a separate arm, but that means you'll have to spend on another arm set and they don't come cheap! Or you can keep it in your BC pocket and hold it in place by hand when needed, which is what I mostly do. In fact I find it easier as it gives more control. Success in using the bounce plate also depends a lot on the situation. If the position of your subject allows, use it. If not don't move the subject or damage the reef in your attempts! The technique works best in flat or open areas where you have room to move. As for choice of subjects, well basically stuff that moves slowly or better still doesn't move at all! A nudibranch is the best candidate! Lastly, you can experiment with different materials. I find that an aluminum plate, polished on one side and matt on the other works best. You can use either side depending on how hard you want your bounce to be and aluminum doesn't rust!

There are several advantages for using this technique. The obvious one is of course cost. I'm sure a small piece of aluminum is a much smaller investment than a second strobe! Besides that, it is also ideal for situations where you simply have no



The key word in this shot is separation. I used to taped up strobe for this one. The subject was sitting on a protruding edge of a rock, which made it easier for me to cut the light away from the background. As both strobes are taped up, it took a while to get them both in the right position.

Equipment: Nikon D70 in a Sea n Sea housing with 2 YS 90DX, and 105mm macro lens Exposure: 1/60 at f22

room to position your second strobe. (Imagine a nudibranch hiding against a big rock!... I've lost many good shots to big rocks!) Lastly, you don't have to worry about balancing your fill. Those using 2 strobes will tell you it can get a little tricky controlling the output of both strobes. With a bounce plate, you only worry about 1 strobe.

Once you get the exposure right on that, a well-placed bounce would 'fill in' the rest (1.5 to 2 stops under from key light.) So give it a try on your next dive, you'll be surprise what a big difference a small bounce plate can make!



This shot was taken with the main strobe taped up. I used the edge light of my second strobe for fill. Good separation created the 'wow' factor in this shot.

Without the isolation and shadows, the subject would not have stood out as much in the picture. Of course it took me a while to get the spot in the right position. I took 13 frames to achieve this picture.

Equipment: Nikon D70 in a Sea n Sea housing with 2 YS 90DX, and 60mm macro lens Exposure: 1/125 at f32

LIGHT CUTTING.

Light 'cutting' is a term commonly used in studios. As simple as it sounds, cutting light basically means to block / cut the light out of the picture. This is usually done with a piece of black wooden or foam board held in front of the light

source to create shadow areas. These black boards range from small A5 sized pieces to large 8 X 4 feet ones and are known as (you guessed it) 'cutters'. Photographers mostly use cutters to create mood shots with lots of shadow play, to isolate light to one point, or even just to block flare from going into the lens. So as you can



Picture of taped strobe (left) and bounce plate (right).

see, cutters are useful and they are no secret to studio photography but like the bounce technique, few underwater photographers use it.

The main use of cutters underwater is to isolate light to one point, to aim light at where you want it (on your subject of course!) while leaving the rest of the area dark. This is useful in creating the ‘mood’ shots that we have been talking about. Imagine a brightly colored shrimp on a brightly colored coral. It will be hard to achieve good separation if you just use the full coverage of your strobe to light up the whole area. Sure, you’ll get your well exposed shot of the shrimp but it will be lost amidst the busy background. In short, you lose the ‘wow’ factor because your subject doesn’t stand out.

One sure way of achieving good separation is to limit the light only to your subject area. Here’s

where cutters come in. Don’t worry, I’m not asking you to bring black boards underwater! A roll of black duct tape would do the trick. You simply tape up your strobe leaving a hole about 1 X 1 inch wide. The size of the hole depends on how isolated you want the spot to be. (Bare in mind the smaller the hole, the harder it is to accurately aim your strobe onto your subject.) Of course a spot adapter would do the same thing and I know of strobe makers who produce them, but I can assure you they cost a lot more than duct tape!

To create good separation with lots of shadows and mood we once again rely on strobe dominated shots. Balanced light pictures don’t usually work when you want to separate your subject. No point trying to isolate your strobe only to have the shadow areas filled in by the ambient light. With that in mind, the same high f stop (f/ 22 and above if your camera supports) and fast shutter speed (1/125 or faster) applies. Accurately aiming your strobe takes a little experience. Due to the taping up of your strobe, high f stop and fast shutter speed, a poorly positioned strobe would leave your subject totally in the shadows. So take your time to get it right. Remember, those pictures you see in magazines didn’t happen within 1 frame, taking more than 10 frames for 1 good shot is not uncommon.

For those using strobes with detachable diffusers, I would recommend getting a spare. Duct tape one and keep the other in your BC pocket or strap it to your strobe arm. That way you can easily change your

set up when the right subject comes along.

I hope these two simple techniques will help you achieve some great shots. As I said, they are nothing new to photography, just that few of us thought of using them underwater. Now that you know them, the least you can do is give it a shot. Duct tape and small metal plates are not huge investments, but you will be surprised how something that simple can produce great results. Enjoy!

Aaron Wong
evid77@yahoo.com



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