

Stroboscopic

by Glenn Lawyer

Tired of taking sharp, well-lit shots, I decided to move into new territory. Buried in a sub-menu on my Canon 7D was the option to set the on-board flash to “multi-flash,” an option which optic cables would eagerly pass on to my Inons. Stroboscopic!

Some thought and a quick experiment in the kitchen taught me the first step of this new-to-me technique. Long exposure (0.5-1 second) with (almost) all of the light in the exposure provided by the strobes. The strobes themselves had to recycle 3-5 flashes in under a second without overheating. This meant low power; throughout my experiments I kept the right hand knob between 2.8 and 4 (call it 1/4 power).

Time to take it to the pool. Wide angle lens, medium aperture. For a subject, I used a convenient toy to moor a plastic squirt gun to the bottom.

My technique was simple. Strobes in close to the dome. Subject-to-camera distance such that the subject fills only part of the frame, say 7-8 inches. Place the subject at the edge of the frame. Pull the shutter release while panning the camera. The goal is to have each flash expose the subject onto a different part of the camera’s sensor. Flash frequency in the 8-10 Hz range gave the best results, with exposure times of half a second. Focus was problematic with a moving camera and a drifting subject, but in ten minutes I had several acceptable images.

Convinced that glory lay just around the corner I booked tickets to Bonaire. We arrived just in time to help Captain Don celebrate his 85th birthday.



Squirt gun in the pool.

Exposure Time: 1/4 sec, Lens Aperture: f/11.3, ISO Speed: 100, Focal Length: 13.00 mm, Tokina 10-17mm, Canon 7D in Aquatica housing. Twin Inon z-240s set to 1/4 power.

Low ambient light photography translates “night dive.” It was not until the next evening that I was able to try my technique in real conditions. It soon became obvious that whatever corner glory was laying around must have been on another island. The first lesson I had forgot to learn from my pool experience was the importance of having the subject against open water. Any sort of background reflected too much light. When luck was with me, this could produce ghostly images of fish against a marbled background. Lucky images were the rare exception. Washed out over exposed blurs were the norm.

My first challenge, then, was finding suitable subjects. Fist-sized or larger fish who preferred to stray away from the reef and which would allow



My second pool experiment

Exposure Time: 1/4 sec, Lens Aperture: f/11.3, ISO Speed: 100, Focal Length: 13.00 mm, Tokina 10-17mm, Canon 7D in Aquatica housing. Twin Inon z-240s set to 1/4 power.

a close approach. Not likely, not with four hungry circling tarpon drawn by my torch. I did find one or two volunteers on the sands. But I was slower to set up and approach than the tarpon, with things generally ending badly for the intended subject.

The biggest problem can, in fact, be one’s salvation. If it was to be tarpon, then they could be the subject. In fact, their highly reflective scales made them somewhat ideal, as they reflected almost all of the weak light from my strobes. If you have ever done a night dive in Bonaire, you know that getting tarpon to swim close to you is not really a problem. But I didn’t want tail or side-view shots. With patience I learned that if I lit the sand far away from me, and slowly moved the circle of light towards me, I could lure them into a head-on



With luck, the tarpon can be lured into a close head-on approach

Exposure Time: 0.7 sec, Lens Aperture: f/11.3, ISO Speed: 400, Focal Length: 17.00 mm, Tokina 10-17mm, Canon 7D in Aquatica housing. Twin Inon z-240s set to 1/4 power.

approach. Sometimes.

As the fish made its final approach, I would lift the camera, frame the tarpon, and let loose the lightning. Pre-focus was essential-- if I turned my torch on the tarpon so the camera could auto-focus, the fish would break off its approach. I never did figure out the best balance of aperture and ISO speed given the low power of the strobes and the changing distance to subject, so exposure was mostly due to luck. Next time I will boost the ISO and tighten up the lens.

The bigger challenge is coordinating the framing and panning with the flash speed and fish's movement. The panning needs to place the subject on a different part of the sensor for each flash. If the fish is swimming, this means panning either faster



It is easy to overexpose the background, while the fish itself appears translucent.

Exposure Time: 0.7 sec, Lens Aperture: f/11.3, ISO Speed: 400, Focal Length: 17.00 mm, Tokina 10-17mm, Canon 7D in Aquatica housing. Twin Inon z-240s set to 1/4 power.

Right. Baby drum. Exposure Time: 0.3 sec, Lens Aperture: f/9.5, ISO Speed: 200, 100mm macro, Canon 7D in Aquatica housing. Twin Inon z-240s set to 1/4 power.

or slower than the fish, depending on which way it is swimming. Here I cheated. 18 megapixels gives you lots of cropping opportunities, unless you are planning on turning out posters.

After three nights it was time to try something else. Macro. I was sceptical for two reasons. Depth of field is reduced compared to WA, and my 100mm devours light. Light is in short supply with strobes at 1/4 power. On the other hand, my subjects wouldn't be tarpon bait, and I could set up and take the shot with my eye on the viewfinder.



Macro made it easier in other ways also. The lens's appetite for light re-defined "against an open-water background." I only needed 20-40 cm of water behind the fish. The amount of panning was also drastically reduced. A few centimeters did the trick. This took some learning, and I had many shots where the fish was well off the frame for the final 2-3 flashes.

The trip ended long before mastery was achieved. I have again been reminded of the importance of knowing my subjects, so I can better



Exposure Time: 0.3 sec, Lens Aperture: f/9.5, ISO Speed: 200, 100mm macro, Canon 7D in Aquatica housing. Twin Inon z-240s set to 1/4 power.

plan the image. Coordinating flash speed, fish speed, and panning speed remains a challenge. Exposure is difficult. I have not yet mentioned backscatter. Suffice it to say that I made generous use of the Gimp's despeckle filter and heal/clone tool in producing the final images shown here.

I would like to promise another article soon which shows what can be done after mastering this technique. It is unlikely to come from me, however, since I don't see the opportunity to try again any time soon. But perhaps you will write it?



Glenn Lawyer

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