

Feel free to stop reading this at any time or to nod off whenever you want. It is for acquired tastes but relevant, and hopefully useful, so here goes:

Progress is a great thing and innovation should surely be embraced but there is a modern capability which is offered to us by many manufacturers based on 'We can make it do this'.

Take, for example, adding artificial light underwater. Early attempts, pre 1900, involved igniting magnesium in an oxygen rich glass enclosure. This produced a 'flash' (not a strobe) of bright light which illuminated the subject during a long/timed exposure which could be up to 30 minutes.

Incredibly, underwater, this was the same basic technique that was used until the early 1970s - disposable flashbulbs (not strobebulbs) with bare wire ends which, when shorted together in a metal holder, ignited and produced a flash of light.

By this stage, film emulsion was much more sensitive and allowed exposure times of a fraction of a second so the camera shutter had to be synchronised with the flash so one opened and the other flashed at exactly the same time. The camera did this very simply by closing two contacts when the shutter was fully open and this, almost instantly, ignited the flashbulb.

The really big breakthrough came with the invention of the electronic flash; a device which charged up a capacitor to a high voltage and then discharged it through a glass tube containing xenon gas with a contact at either end. The duration of this instant flash of light was much shorter so it 'froze' the subject and made it appear much sharper which was a big bonus. The other big bonus, especially for underwater photographers, was that the flashgun could produce another flash as soon as the capacitor had been recharged by the battery; so no need to change flashbulbs after every shot.

Fast forward slightly to the mid seventies and we saw the first commercially made, purpose built underwater flashguns. These were still triggered conventionally by closing two contacts together so were very simple but their effect on the quality of underwater images at the time was seismic.

In order to 'sync', the shutter speed was almost fixed at around 1/60th sec which left the underwater photographer to decide what aperture to set on the lens. Since this was based totally on the distance from the flashgun to the subject, the bigger the distance, the wider the aperture. Not that difficult at all, really.

Editorial

So where is all this going? Well, I reckon this is exactly where the 'We can make it do this' syndrome came in. Life was pretty simple at this stage. Decide on the distance, set the aperture and touch two contacts together. We never had it so good.

But pretty soon we were offered Auto Flashguns where a very clever, separate sensor measured the light reflecting from the subject and reduced the flash output accordingly so, in theory, no more over exposures. That sensor was then incorporated in the camera, making it much more accurate and so Through the Lens (TTL) circuitry began.

Circuitry is very much the appropriate word here because electronic components were now being used to control the light output and this, in turn, needed more than two wires to complete the circuit and trigger the flash. This led to a great many problems because there was typically a 5 wire cable between the camera and flashgun.

On land, with no salt water, if they were to be easily separated, there as an external 5 connector shoe on top of the camera which mated with the matching set on the base of the flashgun. The flashgun too had a removable lead so that made 20

touching contacts to transmit the data back and forth, all of which have to be clean and dry. Take the combination underwater and that doubles the touching contacts to 40 protected from saltwater ingress by small O rings. If any saltwater moisture got into the system it caused havoc with the signals between camera and flash.

Fortunately the fibre optic cable came along and simplified operations enormously; so there were far, far less flash malfunctions. Fibre technology is digitally based and it this which has provided us with very accurate and reliable versions of TTL exposure control.

Unfortunately camera manufacturers all have their own versions so we now have, to name but a few - Nikon iTTL, Canon sTTL, Pentax pTTL and Olympus/Panasonic HSS/TTL. This complicates life for underwater flashgun manufacturers and has encouraged the arrival of third party adapter makers.

All very complicated when the original idea was only to set the aperture based on the distance to subject, triggered by shorting just two wires. Throw in the modern and hugely important, instant feedback LCD screens and, IMHO, you have a no brainer.

Sometimes, often, less is more.

Peter Rowlands
peter@uwpmag.com

www.uwpmag.com

Dive with Reef Check in the Red Sea

REEF CHECK CITIZEN SCIENCE EXPEDITION

July 5-12, 2025

**Expand your skills on this Luxury
Liveaboard Dive Experience
aboard the MY Turquoise**

- **Get certified as a Reef Check EcoDiver & Citizen Scientist**
- **Learn how to photograph for scientific research and conservation**
- **Study Underwater Laser Photogrammetry**
- **Photo opportunities on healthy reefs & scenic wrecks**



Reef Check
WORLDWIDE



[CLICK HERE FOR DETAILS](#)

OFFICIAL **submerge** ADVENTURE

Seasick Productions