Adventures with a Wratten 22

By Paul R Carre

I blame that Mustard bloke. He got me started in this foolish filter lark with his Magic Filter, which isn't really strictly proper 'Magic' in the Harry Potter sense but under the right conditions comes frighteningly close.

Anyhow that comes later, all this started when I attended one of Alex's Red Sea Workshop trips. On day two, while chatting with Alex, the subject of filters (predictably) came up. It was at this point that I made my critical error, I confessed to loving Black and White pictures.

Discussion followed; it seemed that Alex had been 'experimenting' with, (surprise, surprise), several filters specifically targeted at underwater B&W. Was I hooked? I didn't stand a chance, indeed I pleaded mercilessly with Alex to be given a sample of a hot candidate and an opportunity to try it out.

Reluctantly, I was duly issued a piece of filter to fit the rear of my Nikon 10.5mm lens, on condition I didn't break it (?). As it turned out I did eventually manage to arrange for its theft as it was 'accidentally' left attached to the back of my lens. Alex will never know…

Given its parentage, at that stage I figured I had to be backing a sure fire winner with this fine filter. We later learnt that the filter material in question was indeed 'found' in a photographic shop clearance bin "somewhere in Soho" priced at "er, about a Pound or so". It was also interesting to hear that this filter might be available 'over the counter' (if you can find the right counter that is, more later).

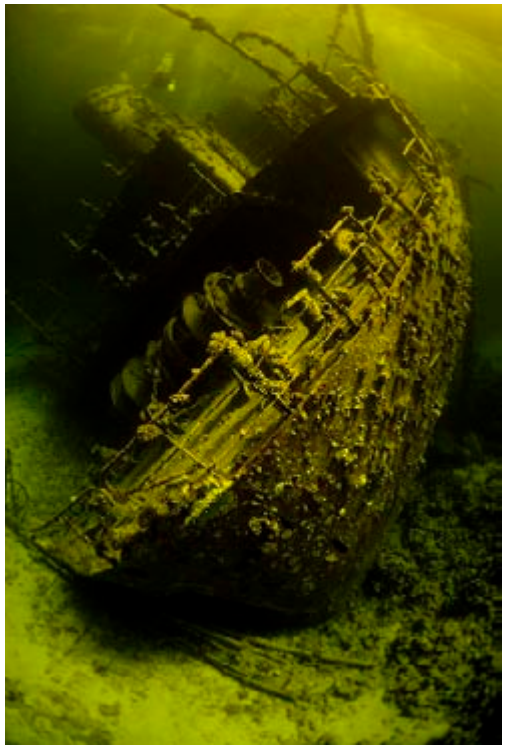
Anyhow, a couple of hours later I was standing on the rear deck of the boat armed with a set of (seemingly) simple instructions:–

Try and shoot with a downward camera angle, to give a nice dark background.

Exhaled bubbles come out a really cool white.

It might be a good idea to crank the ISO up somewhat.

Oh, and the viewfinder may be a bit, well, dark.



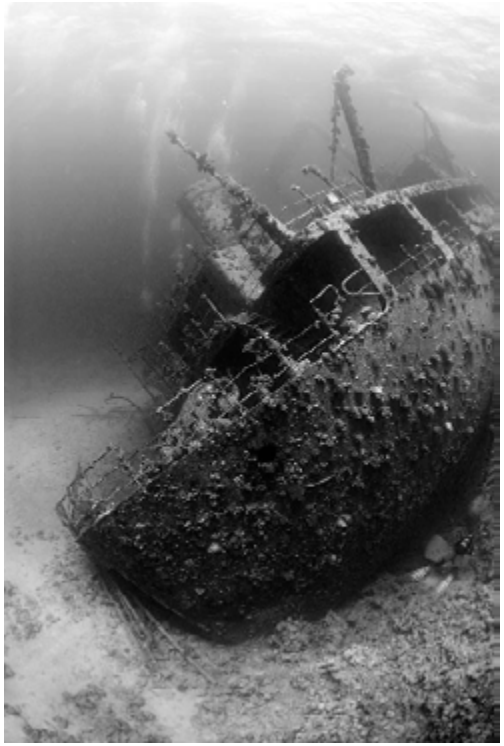
The Wratten 22 (left) is completely removing the blue channel leaving only the attenuated Red and Green. When this is converted to black and white in Photoshop the result is very punchy.

Had I been at all sharper mentally I would have questioned that last one, "a bit dark" – I checked twice to see if I had left the lens cap on (again). Think "Black Cat" "Coal Cellar" and "Midnight" and you get the idea. Subsequent examination of the pictures would show that the filter knocks out the blue channel completely, potentially making it a less than ideal candidate for ambient light shots in the water one would think?

The dive itself probably turned out to be one of the most rewarding underwater experiences that I can recall. After an hour or so I reluctantly returned to the boat with a huge smile and cornered Alex. As far as I remember, the conversation went along the lines of "I don't care if the [word removed] pictures are awful, taking them was an absolute blast".

The image in the viewfinder was dark in the extreme. To obtain any kind of usual exposure the ISO had to

Shot without a filter and converted to black and white in Photoshop



Shot with a Magic filter and converted to black and white in Photoshop

be boosted to 300 or 400, even with the shutter speed at 1/30 I still needed the lens to be near fully open. So, when does the fun part start kicking in again?

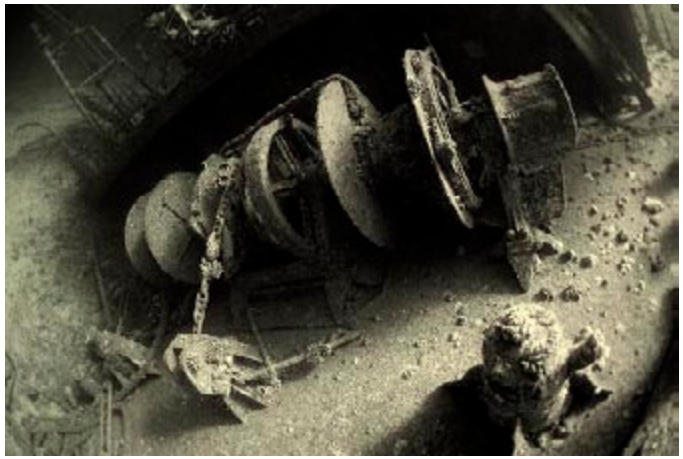
Well, with the viewfinder being so dark I found that I was forced to think much more critically about the composition rather than employing the 'blast away regardless' technique I often favour. In fact I really was forced to think about it, as I couldn't actually see much of value through the thing at all.

Review of the shots on the LCD tended to also be a bit of a hit and miss affair as they all have quite an extreme orange/green cast, so you only get to assess your failure or success later, must be just like the (dark) pre digital days then!

Back on the boat we adjourned to the darkened 'Bat Cave' area and sparked up Photoshop CS. With a spot of 'audience participation' we poked and prodded some buttons - my jaw dropped; some of these were actually not too bad, how did that happen?

After the dive a number of things did occur to me, the auto-focus on the D200 always locked, seeming to focus with ease (which was more than the poor idiot on the other side of the viewfinder could manage). The ISO boost, which I am often very cautious about with the noise prone Nikon, was not a problem at all – in fact, in couple of shots I later added some 'extra' noise while experiencing a rare 'post production arty' moment.

All of this got me to thinking "how/why is this working?" To be honest, I am not fully sure I understand. I had always believed that with digital everything should be achievable via software manipulation given that the CCD could initially capture the full dynamic range of the image. The Wratten 22 is completely removing the blue channel leaving only the attenuated Red and Green -



this has to be key.

As an exercise I examined three similar shots with the same camera and setup. The test shot is the well-known stern shot of the Giannis D, Abu Nuhas, Egypt.

One was taken with no filter of any kind, one with a Magic filter and one with the Wratten 22 – All three were then post processed to the best of my abilities using Photoshop CS to produce a final B&W image.

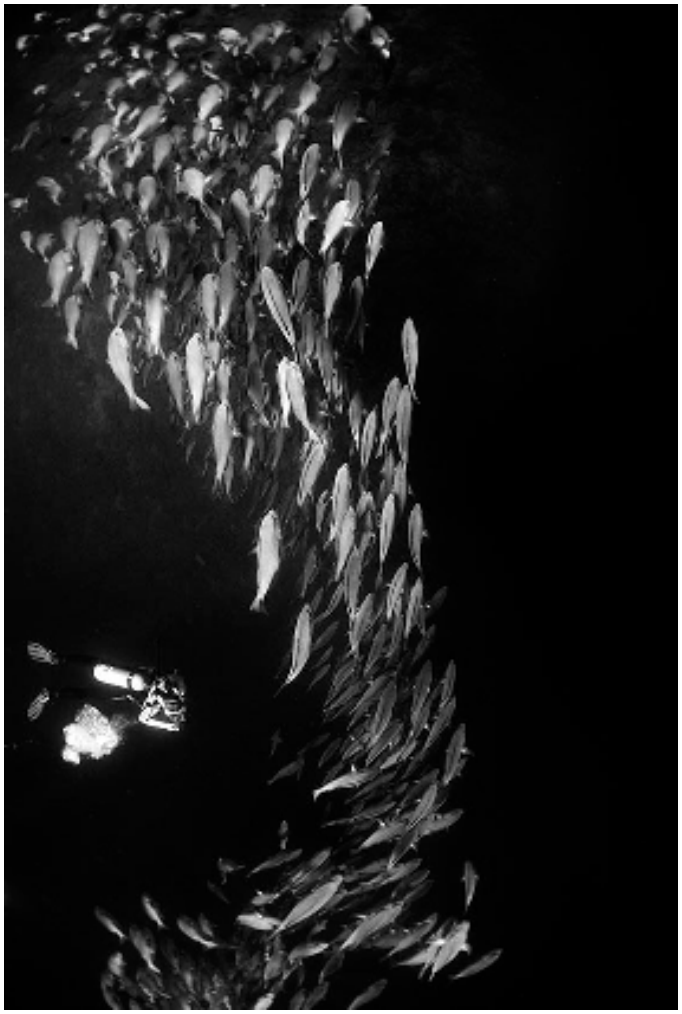
Even if I try to emulate the effects of the Wratten 22 by deleting the blue channel in the other images I cannot replicate its behaviour.

Later in the week I again tried the filter with the shoals of snapper that congregate at Ras Muhammad at that time of the year. The results were maybe not quite as good. Seems fish tend to move about a bit, unlike wrecks. With the longish shutter speed the slight movement of the fish made obtaining a sharp image much more tricky.

B&W Conversion

So far the most successful conversion method has been to use the Channel Mixer in Photoshop CS though using the Luminance channel directly also seems pretty good. The typical RGB histograms for a picture look like this –

As you can see the Blue channel is pretty much devoid of data, what is remaining in there seems to be more noise than data. As a starting point in the Channel Mixer I have used 70% Green, 30% Red and 0% Blue, then fiddle about with the Red and Green for effect. The new B&W Adjustment layer in CS3 is not a lot of use (though it is fast becoming a firm favourite of mine when converting from a 'conventional' RGB colour image). All images need to start out ideally in RAW, trust me you will want the exposure latitude!



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So what is next?

Well, now that it seems I am hooked there appears to be any number of adventures to be had. The first was obtaining a piece of Wratten 22 filter of my own – I did track some down in the USA though the price was a little higher than the sum that Alex initially paid.

For those in Europe, Lee Filters [www.leefilters.com] make a Wratten 21 that promises to be a 'less strong' version of the Wratten 22. Ultimately this may prove to be a more versatile filter for in water use.

The technical department at Lee also suggested that their '778 Millennium Gold' filter might also be similar enough to the Wratten 22. All of these options will be worth investigation. A good friend, and fellow workshop participant, Timo is also trying some of these in his much greener Finnish home waters.

With the wide open aperture come the resultant soft edges on the final image, while this can be sorted with a judicious crop or two it is far from ideal. The fix ? Well we obviously need to close the aperture somewhat, which will mean longer exposures, tripods come to mind, (oh no, I did try it once before and am sure the fish laughed at me).

Following advice from Alex I have also moved up to a larger dome port, as the smaller 6" Ikelite dome that I was using when these pictures were taken may not be doing me any favours. I have also had problems with this port's lack of shade leading to ugly reflections from the rim of the port, (as seen in some of the above images!).

Following examination of the images I would attempt to boost the ISO even more on my noisy Nikon, those with a Canon 5D or similar have a head start here with its superior noise performance.

So this is very much 'work in progress' and I have no doubt that the story has a way to go yet. Ultimately, I have to thank Alex for his help and for starting me off on this photographic adventure.

Wratten filters

Frederick Wratten (1840-1926)

In 1906 Wratten in association with Kenneth Mees developed coloured filters using dyed gelatin – these filters later became known as Wratten filters. Each filter was given a number to identify it. Some of these filter numbers will still be familiar to photographers today such as "Skylight 1A".

In 1912 George Eastman purchased the company and merged it with Kodak Ltd in Harrow England. Wratten and his son worked in Harrow while Mees moved to New York to found Eastman Kodak's research laboratories.

Today Kodak still make Wratten filters which are sold under licence through the Tiffen Corporation.

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Bio

Paul Carre has been diving for more than 20 years in the cold and tidal waters of Guernsey in the Channel Islands (UK). Daytime he can be found masquerading as an Electronics Design Engineer. Pictures have only consumed his interest for the past four years or so. All pictures here were taken with a Nikon D200 / Ikelite housing and all are ambient light.

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