Olympus E-420 and modified PT-E03

by Rob Spray

It seems only yesterday that we took the E-410 to Plymouth for its first outing underwater at the end of last year. We've since given it a real workout in Indonesia (results to follow) but already there's an upgrade - the E-420. It's an evolution and incorporates some worthwhile developments. The E-420 takes the compact body from the E-400, Liveview from the E-410 and adds all kinds of goodies - it has a new sensor (10 Megapixel) like the top flight E-3, a bigger 2.7" LCD screen, contrast detect AF (more on that later), new tidier menus and a baby 'grip' - for those big people who had trouble holding the E-410! Although the E-420 is bigger than the E-410 (by 5 grams!) it takes over as the smallest SLR by replacing it.

Each E-4xx evolution has made worthwhile improvements, the latest seems faster in most ways and the menu tidy has made life easier. Some entry level SLRs aren't really part of their family but this one is - it's just small :-) One of the joys of keeping the same shape (form factor to product engineers) is that many accessories can carry over. Cards, batteries, flashes and lenses (of course) all work but what about the underwater case? Product planners don't often look back and there was concern that the 'grip' would make the body too deep for the PT-E03 case. It didn't. Other details were no problem at all; the control dial changed but worked fine and the larger screen overlaps the window by only by 2mm. But that luck was undone by fashion, minor changes to the mode dial stopped that working and that blocked the power switch too :-(

With a day to go I had to decide if I'd go without a power switch or sort it out properly. In the end it was a simple modification with my favourite fix-it-all - Polymorph - plastic you can mould in hot water. I moulded a stepped disc by pressing Polymorph into some washers. Result: full control and no outward sign that I had a new companion in the case, 400, 410 or 420 who could tell? I thought I could, everything was just that bit better; faster and more decisive. In the PT-E03 it remains one of the few underwater SLRs you can use single handed. The E-420 doesn't really need a grip but the PT-E03 has a good one which allows the index finger to be free for the shutter while the rest grip the case well enough for your left hand to be free for other stuff... buoyancy, DSMBs, adjusting foliage or maybe steadying yourself. This is possible because the camera is small and the slight lip at the top of

Dawn amongst the thong weed of Firestone Bay, a shallow shot with low afternoon sun.....it's only British sun though so it was pretty chilly.

the grip fits most hands just so. At the same time the control dial falls nicely to thumb so shutter or aperture adjustments don't need your hand to move at all.

It goes without saying that the E-420 can use the full range of 4/3 lenses made by Olympus, Leica, Panasonic and Sigma... It should, but that's not true of some entry level SLRs in other ranges where there are lenses you can't use. I talked about the kit lenses in the E-410 article so I thought this one should cover some new ground, we used the 7-14mm and 50mm Macro lenses on our return to Plymouth, both are among the best and unlikely to colour any results. One makes the most of bad vis and the other is great for detailed studies - just the tool for our participation in a Marine Biology course.

This selection of three nudibranches shows how well the spot metering keeps the highlights of these ultra white little beasts properly exposed under TTL control. A long macro lens makes this easier as they occupy more of the frame.

Lens performance is 'diffraction limited' - beyond a certain aperture setting results soften as the iris starts to act as a light grating rather than a simple pinhole. The point when this happens is theoretically proportional to sensor size. As Olympus uses a smaller sensor than other SLRs this could be a pitfall, but it doesn't seem to be. The very thorough tests on SLRGear.com show that the Olympus Zuiko lenses resist this as well or better than others so as well as being sharp wide open they stay sharp until f16 just as lenses on larger sensors should theoretically – their performance varies.

The 7-14mm focuses fast, mainly because the depth of field is huge and it doesn't have much to do. The angle of view is vast making it likely that you'll get both sky and deep shadow in the picture – a good test of dynamic range. My trip was to Devon not Raja Ampat, but the range in some shallow seabed to surface shots was still a cruel test. The E-420 has a new sensor very similar to the one in the heavyweight E-3, which is said to improve dynamic range.

I'd have to concede that lack of DR didn't figure in my concerns about the E-410 and so any comment here would be rather nebulous. Suffice it to say that careful exposure always gives you better pictures. Some sensors (notably the Fuji Super HR types) are very tolerant of overload but at the end of the day my usual problem is underexposure - when my strobes have missed the target or are obscured by weed. New latitude to avoid cock-ups is to be welcomed but the primary protection is to keep an eye on your results and correct mistakes at source... I'll let you know when I find a camera which taps me on the shoulder and asks 'did you really mean to take those all at f2?'. The full frame metering can keep the exposure under control but the histogram is a useful guide in spot and manual modes. In Liveview you can view a live histogram and exposure preview which is a boon when you have time to fine tune and there's even a multi-screen exposure guide which shows previews in in fractions of a stop. The depth of field preview works in liveview too – with true

The filaments of this white bi-spiral fanworm are a great test of high brightness detail and lens quality - no problem there then!

Plenty of detail in this high-key macro shot of lightbulb tunicates

exposure rather than the darkened version through the optical viewfinder of this or any other SLR. I'm not sure a grizzled snapper would make use of these options but they are there if you need them and they're a great tool for illustrating these properties to newbies who may enjoy a live demonstration rather than a lecture on on optical theory.

Normally the E-420 retains the same 3 point system as all Olympus SLRs, apart from the E-3, and as usual the first thing I did was to turn the outer ones off.I hate having to guess what the camera is most interested in. If you use Liveview then you have other options and can use 11 focus points for contrast detect (CD) AF to focus. You can opt for pure CD AF, the conventional system which needs a flip of the mirror or a combination of both – called Hybrid AF.

Even if you're not familiar with the term 'contrast detection' you'll have used it with camcorders or compact cameras. The theory is simple, the camera looks at the picture and adjusts the lens back and forth until the details are sharp... that's why they focus faster in good light on objects with strong markings – more contrast to detect. This trick is still rare, appearing on only the biggest new Nikons for example, so as a freebie on the baby of the range it's a bonus. None of these options give true SLR focus in liveview like the E-330 had but adding the hybrid mode which enables the full AF to fine tune it makes the work round that bit better.

My own preference underwater, even as an ex-compact user, is to use the optical viewfinder – steadying against your head and fast focus is a godsend - and hold the option of Liveview as a trump card for those shots where it's just not possible to have your head behind the camera or where a better overall view of the scene is required – marshalling friends with lights or strobes for example.

Another new feature (across the Olympus SLR range and ultrazoom compacts too) is wireless strobe control. This studio type technology is a surprise arrival at the 'bottom' of the market and it isn't just slave strobing it's a multi-channel system with full control. Three channels of numerous (I don't know if there's a limit) flashes can be controlled, the power and mode of each varied from the camera. Normally optical TTL slaving is restricted to the sync speed of the pop-up flash but here it just acts as the controller. An array of dedicated flashes can operate at shutter speeds up to 1/4000th. It adds great potential for creativity and since the optical signals can relayed by fibre it'll hit sales of flooded strobe cables too! I didn't exercise this opportunity underwater but I'm saving up to take a night shot of the Thistlegorm lit with chains of remotely controlled strobes!

Our trips to Plymouth and Holland gave ample opportunity to test the camera and considering we didn't have tropical conditions the results were great. In these latitudes the main genre is macro and we found plenty of nudibranches to play with. They're tough to photograph as they're often very white against dark backgrounds but the spot metering kept them nicely exposed and TTL flash was able to do its job properly. The chief adjustment was of aperture to control light and depth of field as for the most part I used the top sync speed of the Sea and Sea setup of 1/250th. My strobe setup used a OLY-TTL adaptor from Matthias Heinrich which allows TTL in manual. It can't do TTL in other modes because my poor old YS-60s can't recover from the pre-flash, but there's no pre-flash in manual mode. I used it in manual all weekend - so my hard work on the dial was wasted :-) Everything else was as per the E-410. Perhaps the

This Flabellina pedata from Norfolk keeps it's delicate colour and the white tips to its dreadlocks

only thing I'd really like to change is the exposure adjustment button, which switches dial control between shutter and aperture in Manual, might work better if it toggled between the two rather than needing to be held down. At least it's ideally placed beside the shutter lever and you can choose whether you want to alter shutter or aperture without the button held down. In A or S modes, of course, it needs no 'shift' button.

With the E-410 I gratefully accepted review advice to turn off noise reduction which was a little heavy handed. This is sorted for the E-420 and the only tweaks for my taste were to boost the sharpness (I like my macro shots crisp) and turn off Auto graduation. Auto graduation is one of the DR boosting functions - which opens up shadow detail – great on land but I prefer deep blacks for my macro shots. These parameters only affect JPEGs so if you shot RAW at the same time you can always change your mind. With the E-420 you can choose to shoot any size of JPEG along side losslessly compressed RAW – I do this as JPEGs are easy to handle but the RAW offers protection from inevitable mistakes :-) Interestingly Olympus have revamped their JPEG compression naming and it's now much more similar to others – named by size and quality. Large, Medium or Small plus Fine or Normal etc. The Fine JPEGs are unusually large (compared with Canon for example) with files up to 7MB – very close to the lossless RAW which are around 9MB.

If you liked the idea of a small SLR when the E-400 was released and hankered again when the E-410 replaced it then the E-420 is the travel SLR you wanted. It does what it does really well and won't cramp your style by running out of steam when you want to upgrade or get creative. It's size may be one of the biggest points against it, there's no boat cred in having the smallest rig and the camera was often mistaken for a compact. There's a kind of inverted snobbery in that and we enjoyed this 'stealth SLR' while others arranged much larger, heavier outfits. The PT-E03 case is as compact as it could reasonably be and works very well. The only serious criticism you could level at it is that it's nominal rating is to 'only' 40m and that a new version for the E-420 shouldn't really have been necessary with a little fore thought. Hopefully the very minor changes needed to make it work with the E-420 can be made ASAP – as they were to the PT-020 for the C-5060 to produce the PT-027 for the C-7070.

The E-4xx series is still the cheapest way to take an SLR underwater and the latest is the best of the bunch, sure the case isn't ready for it yet – and may not be – but its not a tough modification and I'm sure there'll be nicely made kits before you can say 'PT-E03 Mk2 anyone?'

The strongest argument against may be that its big brother, the E-520, now has the PT-E05 housing. Adding image stabilisation and more features for quite a similar price it's not grossly bigger and perhaps this is a market where some visible presence may help sales? I've yet to try a stabilised camera underwater but having used its big brother the E-3 on land I can vouch for its effectiveness there.

More and more the results from digital SLRs are becoming so good that there's little to separate them on technical grounds and the most important factor is the way your chosen system matches your particular preferences. This set-up ticks a lot of the wish list boxes for most divers. We had interest on the boats both from divers who had considered an SLR too big and also those already using SLRs who wanted something lighter for travel. The results are excellent and affected far more by the operator than camera size – in fact much the same sensor is used on the whole Olympus range so the underlying image quality is near identical - you just get more bells and whistle with the bigger bodies.

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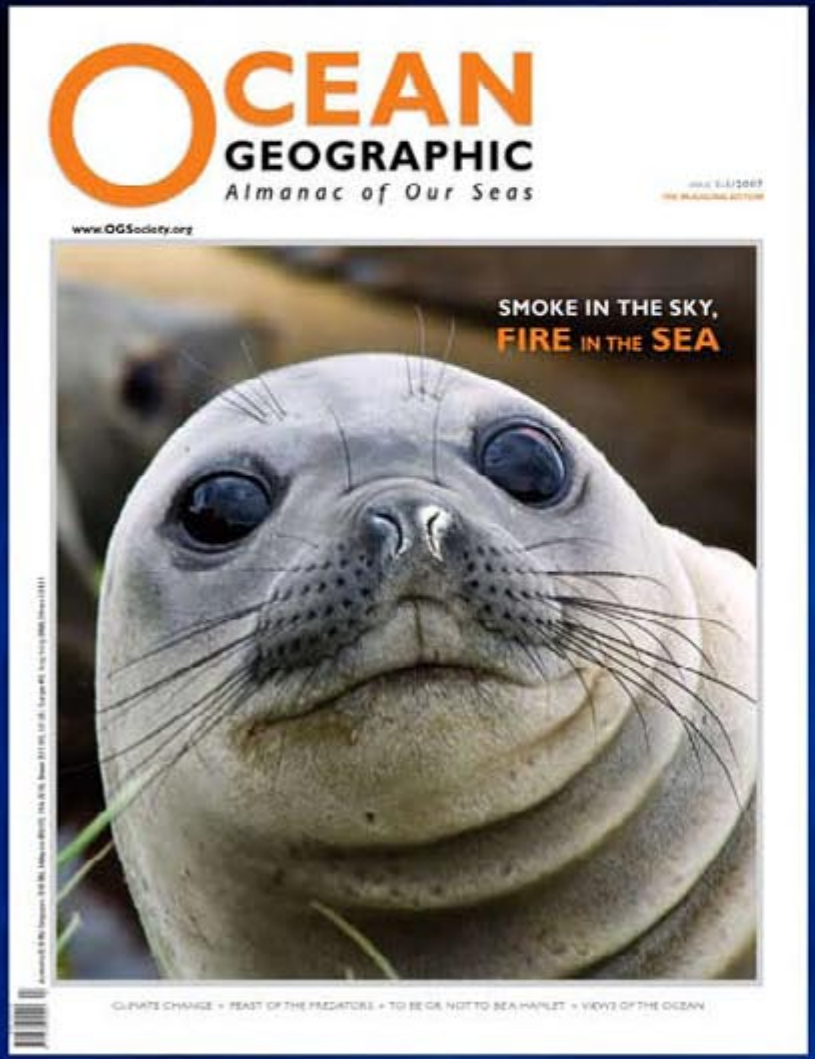

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