

Giant Killer?

Olympus OM-D E-M5

by Alex Mustard

In the last issue of UwP, Peter commented in the editorial that we now truly have three exposure controls underwater: aperture, shutter speed and ISO. The penalties incurred by bumping ISO on the latest SLRs are so small that we can consider changing ISO as freely as we alter aperture or shutter speed.

And it is this philosophy that makes the new Olympus OM-D E-M5 such an exciting camera. In low light conditions the E-M5, as I'll call it from now on, wins on all three counts even compared to many SLRs (I'll explain more below). Add to this image quality that outguns the Canon 7D and Nikon D300 and you have a very exciting photographic prospect in a tiny package.

The E-M5 is a new addition to the Micro Four Thirds (M43) camera range, a system of mirror-less interchangeable lens cameras developed jointly by Olympus and Panasonic. The M43 sensor is smaller than APS-C/DX and only half the size of full frame SLRs. This means small cameras and small lenses, but the optics don't lack quality or price for that matter, not offering much saving over SLR lenses. The extensive lens range covers all the standard angles favoured by underwater photographers, with fisheyes, wide angle zooms, standard zooms and macro lenses.

The E-M5 brings plenty of new tech to M43, including format leading dynamic range,



The diminutive OM-D E-M5, is small, but packs serious specs. Pictured here with Olympus's own housing and dome.

ISO performance, autofocus, image stabilisation and an electronic viewfinder. This is clearly a hugely desirable upgrade to anyone currently shooting M43 or a serious compact. But in this article, I am interested if it is also enough to be a “no buts” alternative to an SLR for even the most serious underwater photographer?

The E-M5 packs 16MP onto its small sensor, which might have your alarm bells ringing when it comes to image quality, particular at higher ISOs. But camera sensors are advancing at such a rate that we're constantly being forced to reconsider the established wisdom. Shooting in low light is, in fact, the E-M5's party piece.

As the light gets limited



The combination of high ISO performance, image stabilization and the greater depth of field of M43 format all combine to benefit low light shooting underwater. The foreground of this image was lit with strobes, but I used an exposure of 1/10th second to get the blue deep inside the cave. Olympus E-M5 + 8mm fisheye. 2 x Inon Z240 strobes. ISO 200, f/6.3 @ 1/10th.

the E-M5 wins on the swings, the roundabouts and the slides. The smaller sensor means we can shoot with a more open aperture than an SLR, I found f/5.6 was giving me sufficient depth of field for fisheye shots, where I might have to use f/8-10 on my DX Nikon and f/11-13 on my FX Nikon. The ISO performance was very impressive, significantly better at a pixel level than a Nikon D300 or a Canon 7D. There is no significant noise in RAW files at 100% at ISOs 200 and 400. By ISO 800 the camera has only a very minor noise, at ISO 1600 the noise is visible but still not especially intrusive and at ISO 3200 the noise is clear, but the file remains entirely useable. ISO 6400 would be useable online, such as in the pages of UwP. And finally the E-M5 has a 5-axis in body image stabilizer that really works. I shot blur free available light wide angle at 1/15th and even did a macro shot at 1/2 second without flash.

The Olympus OM-D E-M5 is a serious camera but it is also a serious investment, costing \$1000 USD (or €1100 Euros) for only the body. Usefully (and rare in this type of camera) the E-M5 has twin control dials (for aperture and shutter speed) and lots of direct control buttons that always make a big difference to the speed and ease with which important settings can be changed



The OM-D E-M5 housing with flat port for macro in Gozo.

through a housing. Having to go through menus always frustrates the photographic process. Furthermore, the camera controls offer extensive customizability, allow you to move important and regularly used controls to where they are most easily reached.

I tested the camera in the Olympus PT-EP08 housing, which is very light and small enough to grip directly, rather than via a handle. A warm housing as Peter Rowlands calls them. It is significantly cheaper than a SLR housing, but also less refined ergonomically. Perhaps the biggest disappointment for many



The OM-D E-M5 has very effective in body image stabilization, which makes it easier to take longer exposures without camera shake. This is an extreme example for testing purposes: a macro of a scorpionfish taken without strobes using the light of a Sola 600 light and 1/2 second exposure. Olympus E-M5 and 45mm lens. ISO 400, f/16 @ 1/2 sec.

M43 converts is that the housing has a different port size (using the Sea & Sea RDX mount) to existing Olympus M43 housings. A port adaptor should be available soon.

I was also disappointed with the poor view the housing provided of the E-M5's electronic viewfinder. I had really looked forward to trying this underwater to see whether I preferred

it to the screen or not. Ultimately I had to shoot using only the screen. Phil Rudin has written previously in UwP about the benefits of using external optical viewfinders with electronic viewfinders.

The Olympus housing offers optical flash control via fibre optic cables. Olympus makes its own brand of underwater strobes, which should



The Olympus housing is a warm housing, meaning you grip the housing directly, as you would a camera, rather than using handles. We were using the handles only for attaching strobes

offer focal plane synchronized high speed flash (standard synch speed is 1/250th), although I wasn't able to test this. I was happy to use both Inon Z240 and S2000 strobes with the E-M5. Both worked well on TTL and manual.

One frustration I had with the flash system is TTL lag. The E-M5 does not have shutter lag, but when I used it in TTL mode there was a pre-flash lag before the photo is taken, which was an annoying half a second. We felt that there might be a cure somewhere in the settings, but the only one we found was using manual flash, which has no lag. As a result I shot manual flash with moving subjects, although this is a time many would prefer the aid of TTL.

The M43 lens choice is ever growing. I love shooting fisheye and the 8mm fisheye lens (which is made by Panasonic) is a real gem on M43. The lens is sharp and because of the small format it



The camera and housing have many direct control buttons, but even if you are forced to navigate the menus, they are easy to understand. Most options are on the super control panel.

delivers excellent depth of field without needing to be stopped down that much. This means we can illuminate wide angle scenes without the need for very large strobes. With 16MP of resolution there is room to crop if you are unable to fill the frame with this ultra wide optic. The 8mm fisheye also has a filter slot, ideal for filter photography underwater.

There are a number of wide angle and standard zooms available. I was only able to try the 9-18mm during this short review, which worked well. For macro I used the 45mm, which was very sharp. I know people are excited about the forthcoming 60mm macro lens, but I think the 45 might be more useful in lower visibility diving. The focus was swift and accurate with this lens.

Olympus state that the E-M5 has the world's fastest auto focus. It is a fun claim, and I am not sure how it is measured, but using it in the low contrast underwater world it is clear that the AF is



The housing provides access to all the important camera controls, but it is not particularly ergonomic. You cannot reach the shutter speed and aperture controls while holding the housing with only your right hand. You must reach across with your left to change them.

inferior to leading SLRs. But it is nonetheless very impressive in AF-S mode, a different world to any compact or M43 camera I have tried before.

AF-S is good for static subjects and high magnification photos, but is less helpful for frame filling shots of erratically moving subjects such as fish. The focus tracking of the latest SLRs is impressive with these subjects and it is one of the few areas the E-M5 cannot match them. I tried AF-C once underwater and it really struggled. I gave up with it and switched back to AF-S, which quickly picked up the subject again.

If AF lags behind SLRs, then image stabilization is arguably an area where the E-M5 outperforms them. The 5-axis system is built into the body and therefore works with any lens. It offers advantages for long exposures in balanced light



In addition to the fisheye, I also shot wide angle with the 9-18mm, although I didn't feel I had the best port setup during the test. I think a port extension would improve performance. Nonetheless, I was impressed by the lens as long as I kept it stopped down. Olympus E-M5 + 9-18mm @ 9mm. ISO 200, f/11 @ 1/250th.

wide angle images in low light, blue background macro shots when we don't want to sacrifice depth of field and scenic shots in ambient light wide angle, such as wrecks. No SLR can offer an image stabilized fisheye.

In conclusion, the E-M5 is a fine camera with strengths well suited to underwater photography. Its image quality is certainly a match for the popular DX/APS-C SLRs and therefore is entirely appropriate for large prints, publication, almost anything. It is a good all rounder, but its abilities in shooting in low light are particularly noteworthy.

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High ISO performance is very impressive for such a small sensor. This test shot was taken at ISO 3200 and shows low noise, decent dynamic range and good detail. No noise reduction has been applied. Olympus E-M5 + 8mm fisheye. 2 x Inon Z240 strobes. ISO 3200, f/22 @ 1/200th.

Its biggest shortcoming compared with SLRs is with fast moving subjects, such as swimming fish portraits. Single servo autofocus is good, tracking autofocus was less impressive. Furthermore, I found that when I used TTL there was a shooting lag caused by the pre-flashes. Compared with compact cameras it is a big step up in this area.

The Olympus housing provides full functionality, but is well behind current SLR housings in usability and ergonomics. This is a pity since the camera matches SLRs in so many areas. That said the Olympus housing probably well judged to its market, being considerably lighter and much more keenly priced.

If you are currently shooting a compact, the E-M5 is an exciting upgrade, giving you SLR matching features in a small, light package, that is straight forward to adjust to, you can still use the LCD screen to frame images.

The camera is also a desirable upgrade for existing M43 users, assuming funds allow for camera, housing and port adaptors. The camera has significantly improved AF, ISO, dynamic range and resolution although the video probably doesn't quite match the current king, the Panasonic GH2.

I can also see it appealing to some current SLR shooters, who are looking to downsize, without compromising on performance and image quality. It would be a great second camera, small in stature, but high in quality. In film days many serious photographers owned both housings and Nikonos viewfinder cameras, and I can see the E-M5 appealing to SLR shooters for the same reasons the compact Nikonos

did.

The dominant trend in all technology has always been downsizing. Computers used to fill rooms, personal stereos used to fill your shoulders and mobile phones used to fill briefcases, perhaps micro is the future for underwater cameras too? All underwater photographers should have a serious look at the E-M5.

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