Underwater Photography
Nov/Dec 2020
Issue 117

Background Image by Stewart L. Sy/SLS Photography

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A web magazine UwP117 Nov/Dec 2020

Publisher/Editor Peter Rowlands
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Editorial

Apple Patent

I have always been a fan of the smartphone for underwater photography and, in particular the iPhone, so I was intrigued to be contacted by a UwP reader who sent me a link regarding a patent which Apple had filed in 2019.

The application was granted recently for “Submersible electronic devices with imaging capabilities”. You can find out more by following the link below but what they plan is: After automatically detecting if a photograph is being taken underwater, the proposed device can make a number of changes to improve the chances the image will be a good one.

This in itself would not be very groundbreaking as there are already apps out there which do a great job at improving existing underwater images. What intrigued me was in the last paragraph of the article which stated that “Apple is also working to improve the water resistance of its devices, which it has explored in other patents by replacing the Lightning port with contacts and magnetically-attached and aligned cables.”

With Apple’s track record of entering an existing market and dominating it, it is both exciting and worrying at the same time.

Link

What do I know?

This September I was once again asked to judge the Torbay Splash In here in the southwest of the UK. It had been postponed from July for “C” reasons but was able to go ahead after the lockdown eased and I was able to view the images remotely and e mail the results to the organisers within an hour. Like a lot of things this year we have learned that there’s a great deal we can still do without ‘being there’.

My point is, however, that the organisers had clearance from the health authorities to hold a presentation gathering the same evening where all of the images from the day which I had judged were projected for those attending to vote for their favourite - The People’s Vote - so to speak.

Surprise, surprise. Either I was wrong, or they were, because they voted for an image which wasn’t even in my top three!

It just goes to show that underwater photography competitions, and in fact imaging competitions of any kind, can distort reality because one man’s meat is another man’s etc etc

Cline’s State of The Dive Industry Sentiment Study

Cline, the Diving Industry Advertising, Marketing & Research Company conducted a recent survey of the diving industry in view of recent developments and it doesn’t make comfortable reading.

There was, however, some wise words which gave a positive take on the situation and the following feedback from one industry insider struck a chord with me:

“We need a strong local diving presence - something that we can focus on even with current pandemic challenges. It’s easy to highlight the exotic, warm and colorful destinations in marketing materials, but as an industry, we seem to have shifted the majority of our focus away from local dive centers and onto destination dive operators.

With that focus, divers have the experience once or twice a year and it becomes easy for them to drift away. It isn’t front of mind for them, they are “rusty” and uncomfortable for their first few dives on each trip, and they are more likely to simply rent equipment from the resort than have their own gear.

A focus on local dive opportunities could help to change this. Reenergize local dive clubs. Increase stories in dive publications that feature excellent local diving rather than the “cold, dark quarry” descriptions that we typically see.”

And before you think that it was I who penned it, it wasn’t; but I couldn’t agree more.

Lockdown 2

Just when we thought it might get back to some sense of normality, here in the UK, and in many other countries, we are going into a second lockdown for at least another month.

That’s back to square one with most activities off limits including watersports. A ban on all but essential travel will put the dive industry back to almost minus one with trips cancelled and, more importantly, future trip planning almost certainly put on hold.

One thing is certain though; there’s nothing worse than uncertainty.

Peter Rowlands
peter@uwpmag.com

News, Travel & Events

Could you be Underwater Photographer of the Year 2021?

The Underwater Photographer of the Year 2021 contest (UPY 2021) opens for entries on 9th November 2020 and closes on 5th January 2021.

The contest is widely regarded as the world's leading underwater photography competition, attracting thousands of entries, with the winners showcased around the world in the mainstream media. The previous edition attracted entries from over 500 photographers and was won by Greg Lecoeur from France.

Chair of the judges, Alex Mustard said "Nobody needs reminding that 2020 has been a unique year, but we are happy to confirm UPY 2021 is on, although with a few changes. We are well aware that international travel has been restricted, but many photographers have been shooting more locally or had time to dive into their archives and find some hidden gems.

We've introduced a new My Backyard Award to celebrate images taken close to home, wherever that may be."

Mustard continued "a notable change for 2021 is that UPY will not offer prizes. We know that winning prizes is a major motivation for entering photographic competitions and we are really proud that UPY has given out so many in the past and surely will in the future. However, the diving industry has been severely impacted by the events of 2020, and in support of them we feel it is not an appropriate time for photographers to be asking for prizes for our pictures. We hope you will fully support this decision as the right thing for our community to do and we've kept all their logos on our website as a thank you for their support in the past."

UPY is an annual competition that celebrates photography beneath the surface of the ocean, lakes, rivers and even swimming pools. British photographer, Phil Smith was the first underwater Photographer of the Year, named in 1965.

Today the competition attracts entries from all around the world, has 13 categories, testing photographers with themes such as Macro, Wide Angle, Behaviour, Wreck and Conservation photography, as well as four categories for photos taken specifically in British waters.

The contest incorporates a bespoke results system, providing feedback to the photographers on how far through the contest each of their images progressed, so every entrant benefits from taking part.

The experienced judging panel remains underwater photographers Peter Rowlands, Martin Edge and Alex Mustard.

www.underwaterphotographeroftheyear.com

Capturing Critters In Lembeh Workshop 2022

22nd - 29th January

Capturing Critters in Lembeh is back for the 10th year running in 2022! We cannot believe that 10 years have passed since we started out with the seed of an idea to host an underwater photography workshop hosted by not one but three professional underwater photographers working together. We never anticipated 10 years ago that this would become the iconic event which it is today.

To mark the 10th anniversary we will, of course, be hosting three more world-class Photo Pros: Erin Quigly, Joel Penner, and Jennifer Penner. The week-long workshop will be packed with incredible diving, presentations from the Pro's and one on one instruction and feedback.

Our 2022 schedule is as follows:
19th– 21st January: Pre-workshop time to relax and unwind after traveling and enjoy some of Lembeh's famous dive sites.
22nd January – 29th January: Capturing Critters in Lembeh 10th Annual Workshop
30th – 31st January: Capturing Critters Workshop Extension

Our three visiting Pros will be working alongside our full time, in-house Photo Pro James Emery, as well as our marine biology and underwater phtography trained team of Dive Guides. With such an incredible team behind you, you'll be taking home some of your best images to date. No matter what level of photographer or videographer you are, you'll learn how to take your underwater imaging to the next level. Whether you are diving with a compact camera, bringing a totally new camera set up with you, or an advanced DSLR you'll learn how to get the best shots possible from your system.

www.lembehresort.com

Basking Shark Scotland 2021

The dark nights are here and Covid measures are taking a grip again - it's hard not to feel down. However we can only plan ahead and we are thinking about summer 2021 already. Our planned 2020 summer start a few days after lockdown was lifted and we had a fantastic wildlife season - perhaps one of our best ever! Our shark weeks were hugely successful and a popular tour for serious photographers. Our calendar is looking busy for peak season so we would encourage you to book well ahead!

Our main focus is wildlife tours, running seasonally to encounter iconic species alongside dedicated staff qualified in marine science and professional diving. We are passionate about the marine environment and have created a code of conduct to ensure our operations have no impact on the areas or species we visit. We have an active science programme which every tour contributes to, as we are in a unique position that we observe and swim with more basking sharks than anyone else in the whole world.

www.baskingsharkscotland.co.uk

Digital Underwater Photography With PADI

PADI's Digital Underwater Photographer eLearning program is perfect for photographers who want to take the plunge and dive beneath the surface to capture the wonders of the underwater world.

The Digital Underwater Photographer course is a popular specialty diving course available from PADI®, the world's largest diver organisation. It enables users to easily learn the knowledge and skills involved in taking their first great underwater photographs, or fine tune their existing skills to produce stunning underwater photographs.

The convenient, interactive online study option takes approximately 12 hours to complete and allows users to learn anytime, anywhere at their own pace, using videos, audio, graphics, reading and short quizzes to help learn and gauge their progress. It also gives access to an online version of the Digital Underwater Photographer Manual.

The course is then completed through hands-on practical training during two scuba dives and guidance from a PADI Professional. Students learn how to choose the right underwater camera system and underwater imaging principles for good exposure and composition by using the PADI SEA (Shoot, Examine, Adjust) method. The SEA method helps learners get great shots while applying the practical techniques with their digital camera.

PADI's Digital Underwater Photographer course counts towards the PADI Advanced Open Water Diver course and the PADI Master Scuba Diver rating. Students can complete the knowledge development portion of the course from home or anywhere in the world with PADI eLearning (cost: £135.00). This includes online training, digital assessments, and a certification card.

www.padi.com

Stream2Sea Teams Up with Shark Allies

Stream2Sea, which set the standard for reef-safe sunscreens, has become the first brand to officially join the Shark Allies' Shark Free Products Campaign.

"More than three million deep-sea sharks are killed every year, in part for an oil called squalene contained in their livers," said Autumn Blum, Stream2Sea founder and formulator. "Squalene is a wonderful natural ingredient, but only when its derived from sustainable sources like olives."

Up to 100 million sharks are killed every year, mostly for their fins which are considered a delicacy in parts of Asia. "That's simply not a sustainable loss," said Stefanie Brendl, founder and executive director of Shark Allies. "Over the last 30 years, some shark populations have declined by more than 90% and one-third of all shark species are threatened with extinction. As apex predators, sharks are critical to the survival of marine ecosystems around the world."

Ironically, Brendl and Blum both built their organizations after "aha" moments in Palau. Blum saw a sheen of skincare products floating over a pristine coral reef; Brendl saw a boat returning to shore with dried shark fins hanging from its railings. Both returned to the states determined to help protect the planet's waters in the best way they knew how.

Stream2Sea's formulations have always contained squalene derived from olives but shark squalene is often less expensive and is often found in skincare products that don't include information on its sourcing.

And unless a label clearly identifies a source for squalene, there's a good chance that it came from sharks because it can be less expensive than squalene derived from other sources. "Over time, we're hoping that prices will drop as demand for vegetarian squalene increases," Blum said.

The goal of the Shark Free Products Campaign is to educate consumers who typically have no idea where ingredients in their skincare products come from, Brendl adds. "Sometimes we get questions like 'why is shark-free skincare important' because most people don't connect sharks with their favorite lotions or creams."

www.stream2sea.com

The Blue Army, Iceland

Tómmi Knúts began diving in Iceland in 1973 and from then on developed an extensive career as a diving professional. After establishing Iceland's first PADI dive center, DIVE.IS in 1998, he spent the following ten years teaching students the wonders of the underwater world and setting the standards for diving in Iceland.

Tómmi's love for Iceland's natural spaces and his passion to protect them came through in his teaching and as part of the Advanced Open Water Diver course, he used the Search and Recovery Specialty to teach his students how to safely remove debris from underwater. Whilst with his students on one of the clean-up dives in the local harbor, he noticed the rubbish was everywhere, not just in the water, so began organizing clean-ups on the shoreline and harbors too.

What started as Tómmi and a few students from his dive center, grew into bigger events with more and more volunteers attending. Working with Project AWARE, Tómmi continued to organize beach and underwater clean-ups and for 23 years and counting, has been at the helm of 'The Blue Army' leading the removal of rubbish from the beaches and waters all over

Iceland.

With the power of volunteers and his passion for ocean protection, Tómmi continues to run The Blue Army, now a registered NGO in Iceland. His clean-ups are joined by local and visiting volunteers, politicians and international embassies, and when manpower isn't enough, Tómmi using his signature blue pickup truck to remove large items like fishing nets and other ghost gear.

"Since 1995 over 6500 volunteers of The Blue Army have spent over 66 thousand man-hours in over 200 different projects to remove 1430+ metric tons of all kinds of rubbish (scrap metal, fishing gear, plastic, tires, timber, batteries) from Icelandic nature." says Tómmi.

The Blue Army is well known in Iceland as well as internationally, and Tómmi's dedication to ocean protection doesn't go unnoticed.

"I have received numerous awards for my contribution for the environment incl. the highest awards from the government, The Natures Awards. The Blue Army and the NGO Landvernd are nominated to the Nordic Environmental Awards this year for our Clean Iceland program." says Tómmi.

Blue Army

The 200DL Underwater Housing for Canon EOS R5 is now shipping...

- 200 ft (60m) depth rating
- Extendable trigger-style shutter release lever and AF-ON button thumb lever for back button focus
- Interchangeable Dry Lock port system including flat ports, compact and full-size 8” dome ports
- ABS-PC construction is significantly lighter than aluminum and corrosion-proof
- Clear view back with laser engraved control markings
- Ergonomic direct-drive controls with soft-touch control knobs
- Manual flash bulkhead and hotshoe with option to add TrueTTL strobe exposure via the DL5 DS Link TTL Converter
- Wi-fi transfer is possible through the housing above the surface of the water
- Built in vacuum valve
- Made in the USA

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New Products

Nauticam NA-EM10IV Housing for Olympus OM-D E-M10 IV

The Olympus OM-D E-M10 Mark IV receives a noticeable bump in resolution to 20MP while fine-tuning and improving the other aspects that have made the E-M10 lineup successful. Setting it apart from it's direct competitors, the E-M10 offers 5-axis in-body stabilization and the internal flash allows for accurate TTL flash triggering over fiber-optic connections. Internal 4K 30p video recording makes it an ideal hybrid camera platform in an ultra-portable package.

The Nauticam NA-EM10IV, similar to the E-M10 Mark IV, builds upon its predecessors to deliver the most intuitive and capable housing for the E-M10 line. Taking advantage of the Mark IV's improved features requires a housing that places controls where you need them most and allows for the use of purpose built underwater optics.

The Nauticam NA-EM10IV features built-in fiber optic bulkheads to support the use of the camera's TTL when used with supported strobes and fiber optic cables. There's no need to pop-up the flash before inserting the camera into the housing as it can be engaged via a dedicated control atop the housing.

The NA-EM10IV's design reflects the ultra-portable nature of the camera itself, making the housing system that's truly travel-friendly.

Dimensions 184mm(W) x 138mm(H) x 100mm(D). Weight in air 1.08kg. Weight in water 0.1kg (incl. camera and battery). Depth Rating 100m. Port Mount N85.

www.nauticam.com

Ikelite 200DL Housing for Sony Alpha a7S III

A full featured and durable waterproof housing for Sony Alpha a7S III full frame mirrorless digital cameras. Suitable for scuba, snorkel, surf, pool, and any application in or around the water.

This housing features our robust Dry Lock (DL) port system. “Dry Lock” refers to the placement of the o-ring on the outside of the port mount. This improves visibility and reduces the chances of water dropping onto your precious camera sensor. DL ports are the lightest on the market, yet robust and capable of standing up to rough surf. Attachment is quick and secure. A system of extensions can accommodate a huge variety of lenses with ease.

Most popular zoom lenses and select lens focus rings can be engaged using simple gearing that puts adjustment right at your fingertips. A large, soft-touch knob on the side of the housing makes fine tuned adjustments a breeze.

This housings supports your choice of shooting with manual strobe exposure or adding a TTL converter depending on your application. The flash bulkhead is located on the top of the case to alleviate strain on the sync cord.

The camera mount is front-loading for easy installation and removal. A small mounting plate attaches to the bottom of the camera and secures in the front of the housing. The camera mounting plate does not need to be removed from the camera for surface use or when changing the battery or memory cards. The mounting plate features a 1/4-20 threaded mount on the bottom so that it can be attached to a tripod on the surface.

www.ikelite.com

T-Housing Aluminum deepdive housing V2 for GoPro HERO 9

The best underwaterhousing for GoPro Hero 9. Sturdy aluminum housing, waterproof to 250 meters! Each individual housing is CNC machined from one single aluminum block and completely assembled and tested in Germany. The T-HOUSING is designed to use your GoPro HERO 9 camera with the front lens installed. This makes the camera twice as safe for any water damage.

This underwaterhousing for GoPro 9 is built so sturdy that it simply puts away even the toughest loads. The solid aluminum housing optimally dissipates the heat generated by the camera. As a result, fogging of the windows is practically impossible.

Waterproof up to 250m

High-end Aluminum underwaterhousing, CNC-machined from one single aluminum block.

Optimal heat dissipation; 100% fog free!

Replaceable zinc sacrificial anode

Optional magnetic filter system and magnetic macro lens

www.uwcamerastore.com

Backscatter Olympus PEN E-PL9 & E-PL10 Underwater Octo Housing UH-EPL10

Backscatter have teamed up with AOI to produce the Backscatter Limited Edition Octo housing. As if the simple operation, compact and well-laid out ergonomics, affordable price point, and changeable ports, and built-in LED trigger and vacuum system weren't enough, we just had to go and make it the coolest looking housing around too.

The housing works with both Olympus E-PL9 & Olympus E-PL10, so no matter which camera you use the same housing will support either.

Even with the overall compact nature of the housing, there is plenty of room for ergonomic control access, even for those with small hands or thick dive gloves. The housing includes an alternate shutter lever extension so that no matter whether you prefer to hold the housing directly or prefer to use a handle grip, you

can easily access the shutter without moving your hand. The size of the housing overall is barely larger than most compact cameras and is significantly smaller than similar Micro Four Thirds underwater rigs. When compared to systems like Panasonic GH5 and Olympus OM-D E-M1 III the Olympus E-PL10 really stands out as being easy to handle and small enough to easily pack for travel.

www.backscatter.com

BACKSCATTER

THE BEST BANG FOR YOUR BUCK

OLYMPUS E-PL10 UNDERWATER CAMERA REVIEW

Insta360 One X & Dive Case Package

Insta360 One X is a super-smart and affordable 360 camera for both video and stills. With the 30m depth rated dive casing (included in this package), it is one of the most compact high-quality 360 cameras you can take underwater with you.

The One X can record Up to 5.7K 360 Video with up to 120 Mb/s bitrate. It works seamlessly with Android/IOS app and comes with free to use stitching/editing software that is easy to use.

The ONE X features Insta360's FlowState digital image stabilization that compensates for shake captured in your videos and provides you with smoother footage.

www.insta360.com

Sony Rx100 III & Fantasea FRX100 Va M16 housing package

This package includes the Sony RX100 MKIII camera and the compatible Fantasea FRX100 VA M16 housing. Get almost the same features than with the RX1000 MK V camera and save over £300.

The Sony RX100 MKIII camera offers all the same features than its younger siblings without the 4K video and the 24fps burst mode. The MKIII camera features the same high-quality 20MP sensor than the MKV version.

£890.00 GBP

www.mikesdivecameras.com

Sealux housing for Nikon DSLM Z7, Z6

The new SEALUX CD-Z7 housing made for the lightweight Nikon Z7 allows both taking photos as well as shooting videos.

Now the fullframe mirrorless camera Nikon Z7 with its supreme ease of handling can fully show its capabilities under water, too.

The CD-Z7 housing features very small dimensions. Large O-rings, doubly sealed shafts and even quadruply sealed keys provide the highest degree of safety.

The proven camera slide was made to facilitate the fitting of the camera inside the housing. The handgrip is mounted at the front and can be adjusted. The housing also supports the NIKON FTZ adapter.

www.sealux.de

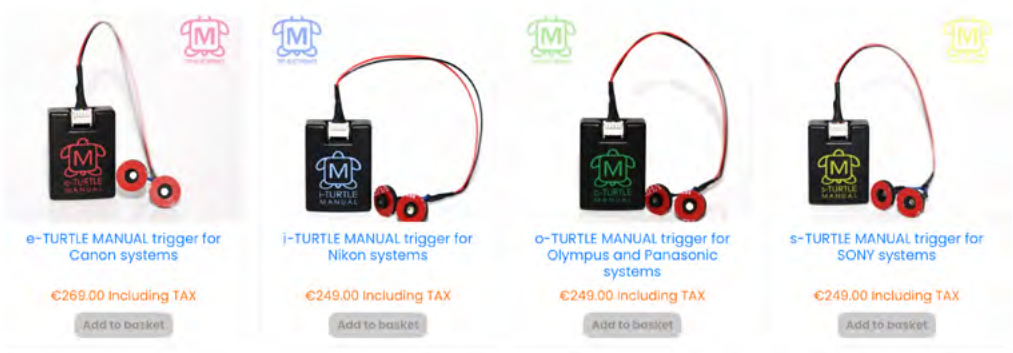
Fantasea FA6400 Housing for Sony Alpha a6400

With your Sony Alpha a6400 camera in Fantasea's FA6400 Underwater Housing, you can capture beautiful photos and video of the undersea world at depths as great as 200'.

The enclosure features the Fantasea Hybrid Vacuum Safety System, which includes both a pre-dive vacuum check and an on-dive leak detector. The system allows confirming the watertight seal of the housing prior to the dive using the vacuum system and monitoring the housing seal during the dive using the moisture detector.

www.reefphoto.com

New manual TURTLE triggers from TRT-Electronics



The manufacturer of the well-known TURTLE SMART TTL converters recently introduced a new family of manual triggers for Nikon, Canon, Sony, Olympus, and Panasonic cameras.

As there are underwater photographers who prefer manual triggers, from now on they can choose the TURTLE MANUAL models. The SMART and MANUAL models are quite similar: their size is the same, it's possible to charge them via a USB socket, they work via fiber optic cables or sync-cord.

The important features for the underwater photographers are similar too: you can choose 1st or 2nd curtain, and they offer High-Speed Sync flash with the appropriate strobe. They are reliable and can take hundreds of shots without charging.

The TURTLE MANUAL models are tested with the same underwater strobes (the most popular Sea&Sea, Inon, Retra, Subtronic, Ikelite, etc. models).

The main difference is the lack of TTL capability. However, the TURTLE MANUAL models are robust, simple, easy to use, easy to set up triggers.

The prices start at 249 euros.

www.trt-electronics.com

INON Viewfinders for Nauticam Housings


Straight Viewfinder Unit II


45° Viewfinder Unit II

INON INC. is pleased to announce official release of another version of INON viewfinders for Nauticam housing to offer viewfinder option for Nauticam housing owners.

Both viewfinders are bundled with a dedicated tool to remove preinstalled Nauticam viewfinder and install INON viewfinder for self installation. You can refer to instruction movie in addition to the user manual. If you do not have confident on self installation, please consult with your purchasing dealer for advice.

www.inon.jp

Gates Deep Komodo

Deep Komodo is everything you expect from GATES: Simple, reliable, "bulletproof". 2 year warranty, legendary support. Seal Check peace of mind. Gates plug-and-play Precision Port and Stackable Port Ring strategy.

And yet, barriers are broken with Deep Komodo. At 25 lbs / 11 kg fully rigged, DK is a backpack-ready, performance-to-size powerhouse.

Field update-able as KOMODO™ firmware evolves, too.

www.gateshousings.com

Nauticam Komodo Housing for RED Komodo 6K

Komodo is RED's smallest and most affordable camera to date. With 6K resolution, 16 stops of dynamic range, and global shutter Komodo packs an incredible amount of power in the palm of your hand. When paired with the Nauticam housing, an easy to use and travel friendly cinema system is created.

The Nauticam Komodo housing is officially RED APPROVED and uses the N120 Cinema port system, shared with Nauticam's other N120 platform cameras which allows for easy transition to the Nauticam Komodo from other N120 Nauticam systems. The N120 system also provides access to Nauticam's line of professional premium optics such as the WACP-1/2 and SMC-1/2.

The housing also features adjustable handles with easy access to the cinema style zoom and focus knobs. On top of the housing is a 1/4"-20 cheese plate which allows for a wide variety of accessory mounting points.

RED APPROVED

The Atomos Shinobi SDI monitor can also be mounted in the external Nauticam NA-Shinobi-S housing and connected via SDI bulkheads and cables allowing greater flexibility when positioning the monitor on the Nauticam Komodo housing.

www.nauticam.com

Sony MPK-UWH1

This underwater housing is for select Action Cams from Sony features a 197' depth rating, it is suitable for all manner of aquatic activities, whether above or below the surface. On top of that, it can serve to protect the camera from hazardous environmental elements such as sand, dirt, mud, and dust.

Compatible Action Cams Incude:
HDR-AS50
HDR-AS300
FDR-X3000

www.sony.co.uk

Nimar Pro Housing for Nikon Z6 / Z7

Nimar are very well known for their precise, innovative, and trustworthy housings. All controls are placed within easy reach.

Lens Support: The Nikon Mirrorless housings for the new Z6 / Z7 cameras allow the use of F lenses as well as Z lenses with the NIM-108 port system.

The NA-Z7 includes a built in fiber optic trigger (manual only) that allows using the housing with external FO triggered strobes without using up the cameras battery. Upgrade to TTL is available with an additional converter.

The housing includes a moisture alarm and vaccuum system to warn of any leaks and make sure the camera is well protected.

www.nimar.it

Ikelite housing for Sony Alpha a7C Mirrorless Camera

We anticipate supporting this newly announced camera model and expect to have more information soon. If you would like to receive an email when we make an announcement about this model, please sign up for notifications below.

We've been making underwater lighting, housings, and accessories for over 50 years. Our knowledgeable and experienced staff is available to help you take your camera in the water and take your photography to the next level. Our products are designed and made in the USA.

www.ikelite.com

Weefine WFS02 Ring Strobe

The Weefine WFS02 ring strobes are specifically designed for underwater use to provide the most colorful and natural wide angle lighting on the market. A professional grade round flash tube and powder coated reflector produce perfectly a soft, stunningly warm 5500K light.
Color temperature: 5500K
Coverage underwater: 90 degrees
LED lighting: 1 watt spot light and 1 watt red light
GN levels: / 1/1.4/2/2.8/4/5.6/8/11/16/22/24
Flashes per full charge : 1200 times at full power flashes
Recycle time: Approx. 1.5 seconds at full flash
Battery: 14.8V 50.32Wh Li-ion batteries pack
Waterproof: 100m
Size :(119 x119mm h= 135.5mm)

www.weefine.com

Subal X1D MKII for Hasselblad X1D-50C MKII

This is our first housing for Hasselblad and is the SUBAL X1D MKII for X1D-50c MKII camera.

Weight: Approx. 2.5 kg (without port and accessories)

Dimensions: Approx. 274 x 189 x 148 (without port and accessories)

Weight in water: nearly neutral (depending on the port and accessories)

www.subal.com

Isotta housing for Sony RX 100 Mark VI and Mark VII

ISOTTA is pleased to announce the launch of its new underwater housing for Sony RX 100 Mark VI and Mark VII. This high-quality housing is hand-crafted and 100% made in Italy maximizing the underwater performance of the Sony compact power house.

The durable, corrosion-resistant anodized aluminum body in its signature red color weighs only 1060 grams including port. It is designed to give photographers access to all functionalities of this advanced camera.

www.backscatter.com

www.uwpmag.com

Hyperion Aluminium Underwater Tripod

The Hyperion Compact Underwater Tripod is suitable for a wide range of Compact and Mirrorless Cameras and Housings. The tray features two tripod screws which can be spaced up to 145mm in distance. The Tripod Tray also features several M4 and M6 Threaded Holes to accept a wide range of Mounts for Ball Arms and underwater photography accessories.

The Hyperoion Compact Underwater Tripod can be extended by using existing Ball Arms and Clamps as Legs, allowing the ultimate in flexibility for the most demanding diver!

Length x Width x Height: 235mm x 134mm x 105mm

Weight: 395g

www.digitaldiver.com

Paralenz Vaquita Dive Action Camera

Paralenz Vaquita is a small yet powerful underwater camera with a simple mission: to enable you to seamlessly capture and share brilliant underwater videos with the world. Get wet, discover the depths below, and make an impact. Every dive counts.

Keep a real-time overview of what you're recording on the Paralenz Vaquita's new True Color OLED screen. It also displays your dive profile along with the current depth and temperature information.

Capture Ocean life in all its details. Paralenz Vaquita's updated technology delivers the smoothest and most vivid underwater videos up to 4K (4k 60fps / 1080p 240fps).

www.backscatter.com

SeaLife iPhone housing

SeaLife is introducing a new compact and lightweight underwater housing for Apple's iPhone. The SeaLife SportDiver's official worldwide launch is planned for October 15; dealers and distributors will be able to order for early November delivery. The new SeaLife SportDiver housing will allow divers to take photos and video with their iPhone down to 130 feet or 40 meters. The SportDiver can encase iPhone 7, 7 Plus, 8, 8 Plus, X, Xr, Xs, Xs Max, 11, 11 Pro Max, and SE (2nd Gen) models. The heavy-duty housing is constructed of Polycarbonate, stainless steel, aluminum and optical grade glass. And while the SportDiver housing is "heavy duty", it is not heavy, weighing less than 1.5 pounds (641 grams), and is lightweight for travelling and offers almost neutral buoyancy in water depending on which iPhone model is used.

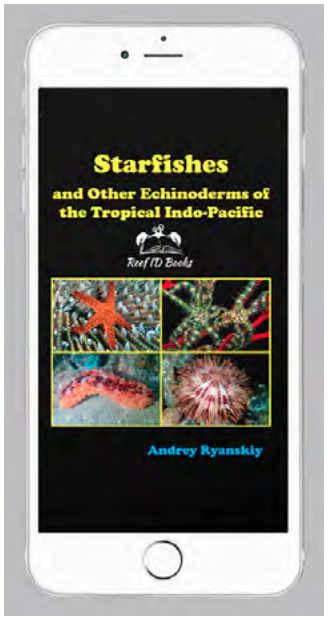
The SportDiver is easy to hold and use and offers a large shutter lever and rear control buttons for easy operation, even with dive gloves. Snorkelers and Divers can get more creative with their photos or video shot by using advanced camera settings. Adjust Zoom, Exposure (EV), Auto/Manual Focus, White Balance, Tint, Lens selection, RAW+JPEG mode, Live Photo and Background Blur (on available iPhone models).

The SportDiver housing includes the free SeaLife SportDiver camera app for iOS 12 and up and unlike other smartphone housing apps, there are no annoying in-app purchases or ads. You can easily switch between photo and video mode. The SportDiver App uses the iPhone camera technology native to each iPhone model.

www.sealife-cameras.com

Starfishes and Other Echinoderms of the Tropical Indo-Pacific

By Reef ID Books



This is the most comprehensive photo guide to the starfishes and other tropical Indo-Pacific echinoderms.

This book covers the region from the Red Sea to Hawaii, Marshall Islands and Guam. Inside the book:

- Photographs of 450+ species, including 126 starfish of the region;
- 100+ species have never before appeared in field guides or popular books;
- Convenient pictorial guide at the beginning and index at the end of the book;
- Special attention was given to echinoderm associates and predators, photographs of 60 of them are included.

$14.99

https://books.apple.com/us/book/starfishes-other-echinoderms-tropical-indo-pacific/id1530633049

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Magazine for
Underwater Photography

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At the Heart of the Coral Triangle

Celebrating Biodiversity

Alan J. Powderham, Underwater photographer and Consulting Engineer, UK

S.E.T. (Sancia) van der Meij, Assistant Professor, University of Groningen & Naturalis Biodiversity Center, The Netherlands

The Coral Triangle, lying at the confluence of the Indian and Pacific Oceans, harbours the greatest biodiversity of marine life on the planet. While it is hardly immune to the growing global impacts of climate change and pollution, it is home to a wondrous variety of species living within diverse habitats. With stunning photography supported by an engaging, informative and accessible text, this book celebrates this biodiversity with the underlying message that it needs our protection before it is too late.

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www.nauticam.com

Wildlife Photographer of the Year 2020

Now in its fifty-sixth year, Wildlife Photographer of the Year is the Natural History Museum's showcase for the world's best nature photography.

The exhibition at the Natural History Museum opens on Friday 16 October 2020. Booking online is highly recommended, particularly for weekends which tend to sell out.

This year's competition attracted over 49,000 entries from professionals and amateurs across 86 countries.

The fifty-sixth Wildlife Photographer of the Year exhibition will immerse you in the breathtaking diversity of the natural world.

Explore some of the world's richest habitats, see fascinating animal behaviour and get to know some extraordinary species.

Go deeper and discover the surprising - and often challenging - stories behind the images during a time of environmental crisis.

Each image has been selected by a panel of international experts and showcases some of the best wildlife photography in the world.

The exhibition encourages visitors to foster a personal connection with the world around them.

www.nhm.ac.uk

The golden moment

by Songda Cai, China

Under Water

Winner

A tiny diamondback squid paralarva flits below in the blackness, stops hunting for an instant when caught in the light beam, gilds itself in shimmering gold and then moves gracefully out of the light. The beam was Songda's, on a night-dive over deep water, far off the coast of Anilao, in the Philippines. He never knows what he might encounter in this dark, silent world. All sorts of larvae and other tiny animals – zooplankton – migrate up from the depths under cover of night to feed on surface-dwelling phytoplankton, and after them come other predators. Diamondback squid are widespread in tropical and subtropical oceans, preying on fish, other squid and crustaceans near the surface. In November, hundreds gather off Anilao to spawn. A paralarva is the stage between hatchling and subadult, already recognizable as a squid, here 6–7 centimetres long (21/2 inches). Transparent in all stages, a diamondback squid swims slowly, propelled by undulations of its triangular fins (the origin of their name), but by contracting its powerful mantles, it can spurt away from danger. Chromatophores (organs just below the skin) contain elastic sacs of pigment that stretch rapidly into discs of colour when the muscles around them contract; recent research suggests that they may also reflect light. Deeper in the skin, iridophores reflect and scatter light, adding an iridescent sheen. From above, Songda captured the fleeting moment when, hovering in perfect symmetry, the diamondback paralarva turned to gold.

An interest in exploration from a young age led Songda to pursue black-water photography. For Songda, being able to explore the ocean is one of the most wonderful experiences in life, and he hopes to show its unique beauty through his work.

www.songdacai.com

Nikon D850 + 60mm f2.8 lens; 1/200 sec at f20; ISO 500; Seacam housing; Seaflash 150D strobes; Scubalamp lights.

Life in the Coral Corridors

Weiwei Zeng

Animals in their Environment

Highly Commended

Diving off the remote island of Romblon, eagle-eyed Weiwei spotted two tiny shrimp, each just five millimetres long. Blending in with the stony colours of a large, round brain coral, so-called because of its appearance, the shrimp travelled along the tight passages of their home. Fighting to keep still against the current, Weiwei framed the shrimp in single file.

These shrimp depend on coral for shelter, sometimes hooking soft coral tissue with their legs and drawing it over their backs like curtains. Yet their fragile dwelling is now threatened. Overfishing can damage the coral habitat by depleting the species that help maintain it, and climate change warms seas, causing coral to bleach from heat stress.

www.nhm.ac.uk

Weiwei specialises in underwater photography in southeast Asia. She has been diving for more than 10 years and is fascinated by the incredible variety of underwater critters, especially macro and super macro critters.

Canon EOS 5DS
100mm f2.8 lens
1/200 sec at f25 • ISO 100 • Nauticam housing • INON Z-240 strobe

The Night Shift

Laurent Ballesta

Under Water

Highly Commended

As night fell, the molluscs began to move on the coral reef. Behind these slow grazers cruised one of the area's top predators: a grey reef shark. Laurent composed this shot of the animals stirring beneath the watery reflection of their habitat, contrasting the angular molluscs with the sleek hunter.

Because the thick shells of molluscs are iridescent and shiny on the inside, they are often used for making buttons, jewellery and other decorations. But, while trade and heavy fishing have led to a decline in numbers, these molluscs are now the focus of conservation efforts. In some countries, young molluscs are produced in hatcheries before being sent into tropical reefs.

www.nhm.ac.uk

Coming from the coastal region of Montpellier in France, Laurent discovered the sea at an early age. While studying benthic ecology at university he discovered a new species of fish in the Mediterranean. He has published portfolios in many international magazines and appears on the French television show Ushuaïa Nature as a scientific advisor in marine environment.

www.laurentballesta.com

Nikon D4S
17–35mm f2.8 lens
1/250 sec at f11 • ISO 800 • Seacam housing • strobes

Underwater Galaxy

by Domenico Tripodi

Under Water

Highly Commended

Having dived in the same area his whole life, Domenico knew that the stiff breeze on this particular day would be a challenge. But, upon descending beneath the choppy waves, he was rewarded, finding himself 'in an incredible sea of tunicates' – marine invertebrates that form long, star-studded-ribbon-like colonies. Domenico framed a jellyfish against the celestial curtain.

Known as the mauve stinger, this relatively small jellyfish can grow to anywhere between three and 12 centimetres across. Although little, it can form large blooms, which are potential hazards to swimmers. Unusually for jellyfish, this species has stinging cells on its umbrella-shaped bell, as well as on its tentacles and the oral arms that trail from around its mouth.

www.nhm.ac.uk

Domenico's love of the sea began in childhood, spending hours observing its inhabitants with a mask and a snorkel. This passion and the desire to photograph led him to take more and more pictures of the beauty found in the Strait of Messina, between Sicily and Calabria, Italy.

Nikon D7200
Tokina 10–17mm
f3.5–4.5 lens at 10mm • 1/125 sec at f14 • ISO 250 • Isotta housing • INON Z-330 strobe

Boat Strike

by Francis Pérez

Wildlife Photojournalism

Highly Commended

This short-finned pilot whale was left unable to swim after its tail was severed by a boat propeller and its body attacked by sharks. In the water, Francis could hear the injured whale's cries, as well as those of its family group, which circled protectively. 'It was the saddest day of my career,' says Francis, who has photographed marine life for 20 years.

These deep waters host more than 20 whale and dolphin species. With increasing boat tourism and no speeding regulations, propeller strikes are a constant threat, especially to pilot whales, which recover from long, tiring dives at the water's surface. Speed restrictions can reduce collisions.

www.nhm.ac.uk

Francis is an underwater photographer and economist, specialising in environmental economics. In recent years his photography has focused on cetaceans and marine mammals. He is a regular collaborator to National Geographic Spain and a SeaLegacy Collective member. He won first prize in the nature singles category at World Press Photo 2017.

www.francisperez.es

Canon EOS 5D Mark IV
15mm f2.8 lens
1/400 sec at f5 • ISO 640

Don't settle for 2nd best

Film - No Filter No White Balance

Digital - No Filter Manual White Balance

Magic Filter Manual White Balance

Digital cameras have opened up new possibilities to underwater photographers. For available light photography manual white balance is an invaluable tool for restoring colours. But when you use it without a filter you are not making the most of the technique. You're doing all the hard work without reaping the full rewards. These three photos are all taken of the same wreck in the Red Sea. The left hand image was taken on slide film, which rendered the scene completely blue. The middle image is taken with a digital SLR without a filter, using manual white balance. The white balance has brought out some of the colour of the wreck, but it has also sucked all the blue out of the water behind the wreck, making it almost grey. The right hand image is taken with the same digital camera and lens, but this time using an original Magic Filter. The filter attenuates blue light meaning that the colours of the wreck are brought out and it stands out from the background water, which is recorded as an accurate blue.

www.magic-filters.com

Retra Flash Pro

by Nicolas Remy

Since 2018, there has been more innovation than ever in the underwater strobes market, so we've had plenty of options when we deciding to try something new. Having had a good experience with their original strobe (loan over a few dives), we decided to give Retra another go and purchased two Retra Flash Pros (which I'll refer to as "RFP" for the rest of this review), which got delivered in July.

At the time of writing this review, my wife/photography partner Lena and myself have spent 75h45mins in the water shooting these strobes, in a variety of situations and trying many of the accessories available to suit them.

Outside: build quality and form factor

The RFP is a nicely built unit, with a brushed aluminum finish that looks good and eases heat dissipation. After dozens of hours diving this strobe "naked", a few scratches are visible on the outside body, but nothing affecting the functionality. I have since then installed the rubber protection rings (bumpers) and neoprene covers, which are nice additions to protect your beloved new strobe. If you don't mind scratches, I would suggest the rubber bumpers are the only protection you really need, as they cover the edges of the strobe.

The RFP isn't a small strobe yet it remained easy to move around underwater, being 130mm long, it was easy enough tucking it close to macro ports. The three controls (2 dial knobs and 1 push button) are easy to grab and differentiate by touch, even at night using dry gloves. A "ready" light at the rear of the strobe indicates when the strobe is ready to deliver a full dump at the set power output. It also doubles-up as a battery-life indicator, and because it is bright, at night it can help distinguishing the markings around the dials.

Inside: some innovative features

Being one of the very latest strobes to hit the market, the RFP comes with several innovative features, some a first in the industry.

For starters, it can be connected to a smartphone via Bluetooth, to visualize useful data and customize functions. Examples include a low-power mode (halves the power output across the range) and ability to fine-tune the focus light brightness. This is an evolutive strobe, and further customization capabilities are expected.

HSS (High Speed Sync) is another exciting capability: provided your camera and your housing LED circuitry (if you are using one) are capable of transmitting HSS signals, you can use the RFP at shutter speeds beyond the camera's maximum sync speed. Note I haven't experimented with this, as my housing's LED trigger doesn't support HSS.

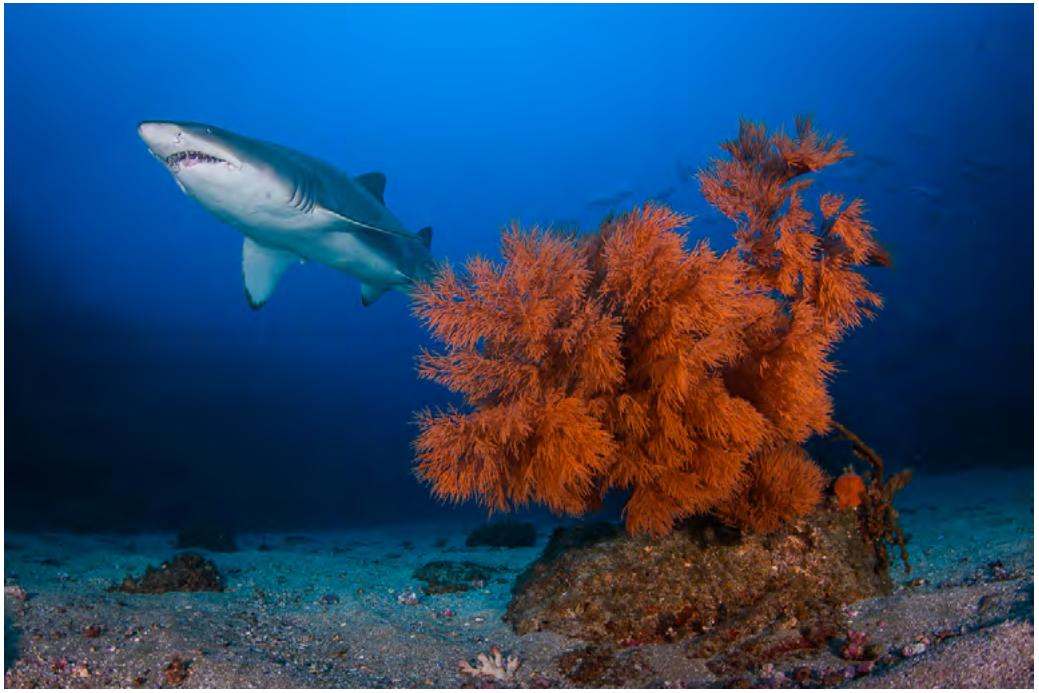
Lastly, the flash can be fired via the rear push-button (the same that controls the focus light), which opens-up other creative opportunities: think long exposures on tripod.

Ease of maintenance and flood resistance

To me, simplicity of maintenance has always been a big decision factor on selecting diving gear: this applies to rebreathers, housing, torches, and… strobes. In this department, the RFP is doing very well.

Firstly, the battery compartment's o-rings fit onto the removable battery cover: making them very easy to inspect. Secondly, these o-rings only need greasing every 10 dives or so. All this means a battery swap takes me less time than with Inons.

Besides being easy to maintain, the RFP has good flood resistance: dual o-rings secure the battery compartment, and a leak detector is integrated within the battery contacts,



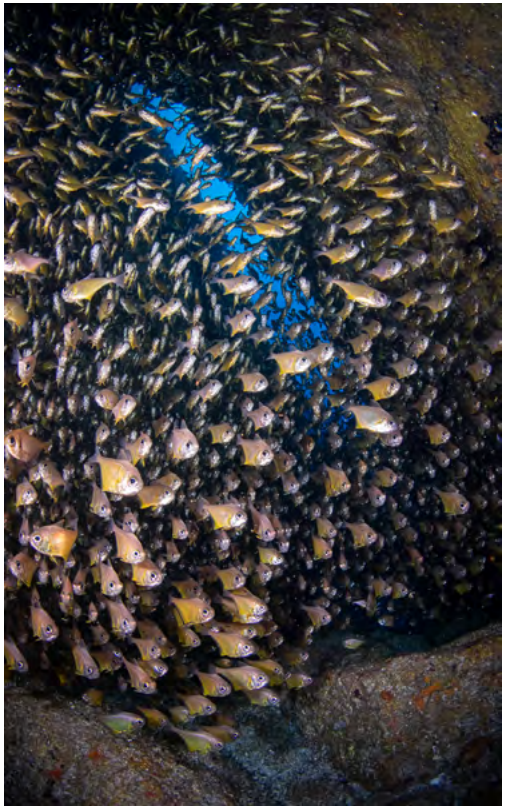
Enough "oomph" to reach the background and illuminate the incoming shark. South West Rocks, Australia. Nikon D500 and Tokina 10-17 at 14mm. Nauticam housing. 2x Retra Flash Pro with WA diffusers, 1/25th @f/10, ISO 250

which will trigger a visual alarm with as little as 2ml water ingress. This alarm tells the diver to stop shooting and clean battery contacts with fresh, soapy water as soon as practical, and dry it. With this procedure, there is a good chance the strobe will work again - a great "save-the-dive-trip" feature!

Quality and quantity of light

The original Retra strobe already had the reputation to deliver quality lighting for wide angle shooting, and Retra decided to further build on this strength, as the RFP comes with a circular ring flash and the front element is more strongly curved (dome shape). All this is designed to deliver a more homogeneous, softer light beam.

In the water, I found that design worked well and really enjoyed the very wide, even and warm light beam (4400K with wide-angle diffusers). The RFPs were very effective for wide-angle and large animals' photography. Compared to experience I had with my Inons Z240s, I found it



The even, soft light makes it easier not to "burn" fish scales, South West Rocks, Australia. Nikon D500 and Tokina 10-17 at 10mm. Nauticam housing. 2x Retra Flash Pro with WA diffusers, 1/160th @f/13, ISO 640

significantly easier to completely light a big scene, while minimizing hard shadows, backscatter and avoiding to "burn" fish scales.

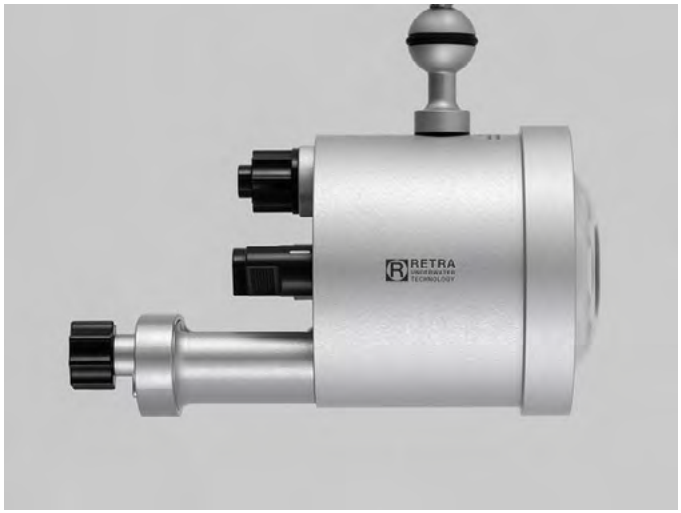
Besides quality, the RFP also delivers quantity: this is a powerful strobe and we mostly found ourselves dialing it between 12 and 50% for wide-angle, 1-25% for macro and fish portraits.

Recycle time, battery capacity, and the optional Superchargers

As noted above, the RFP pulls lots of light from the same 4 Eneloop pro batteries are used on our Inon Z240s (and other strobes), yet delivers a brighter and wider beam. With a more recent design, you would expect the RFPs to also be more energy-efficient, and they probably are, but in practice, enjoying this extra power meant we also took less shots than with our Inons Z240.

Out of freshly charged batteries, we typically got around 300-350 photos per charge when shooting wide angle, whereas in macro we reached around 600-800 shots, depending on subjects and conditions of course. This should be enough to cover a day of diving for most shooting situations.

In terms of recycle time, we haven't felt constrained except when going above 50% power. At full power, you would need approximately 4 seconds between shots if you want to achieve consistent illumination. It



The supercharger mounts onto the original battery compartment, where the battery cap would go. The battery cap then goes on top of the supercharger. Whilst it extends the overall length of the flash by 8.6cm, the supercharger can be grabbed to ease fine adjustments of the strobe orientation

is worth noting the RFP will still attempt to flash, even if the capacitors are only partially re-charged.

If you feel you need more autonomy or faster recycling at high powers, then it is worth looking into the optional supercharger.

The supercharger is like an additional battery compartment, plugging on top of the original one. It allows using 8 AA batteries instead of 4, to essentially double battery life and halve recycle time. Everything doubles-up so when changing batteries, you need to replace all 8 at one (and preferably charge them altogether), and inspect the 4 o-rings (two times double o-rings). Again, the o-rings are onto moving parts (supercharger, cover) so easy to inspect. With the pre-production superchargers I was using, the top lid was a bit tricky to take off: with the RFP resting on a table, I had to pull down the supercharger (after unscrewing the top knob) to let it pop out. No deal-breaker though, and Retra assured me it will be a breeze with the final design.

In the field, I managed to take around 600 photos on both strobes with superchargers, vast majority at 50% power, a few above. This means the superchargers effectively doubled battery life, and I also noticed quicker recycle time.

Lastly, whether or not you are using the superchargers, pay attention to using batteries which are in "good shape": to maximize autonomy, you might consider a new set of Eneloop Pros, instead of the old faithful you've been using for the last 5 years. Also, when possible go for a "soft charging" (most smart AA batteries charging offer one), it will take longer than the default "fast charge" but will help with autonomy.

Due to the 5 meters visibility we had in Botany Bay (Sydney, Australia) that dive, I used one single Retra Flash Pro with reduction ring and one macro ring, to minimize backscatter on this potbelly seahorse portrait. Nikon D500 and 60mm AF-S. Nauticam housing. 1/250th @f/11, ISO 100

The beam is wide enough (approximately 130 degrees with wide-angle diffuser) to illuminate a 3-meters long shark with just 1 strobe, positioned top of the housing. South West Rocks, Australia. Nikon D500 and Tokina 10-17 at 17mm. Nauticam housing. 1/80th @f/8, ISO 200

A pair of Retra Flash Pros with LSDs, bumpers and neoprene covers, mounted on our Nauticam NA-D500 housing. In the foreground, the regular reduction rings, macro reduction rings and masks sets for the LSD snoot

Within its working range, the LSD+RFP combination provides a pleasant, even illumination whilst isolating the subject from the background & ambient daylight. Photo taken mid-day in the shallows, Sydney, Australia. Nikon D500 and 60mm AF-S. Nauticam housing. 1x Retra Flash Pro + LSD (no mask), 1/250th @f/13, ISO 100

Diffusers and reduction rings

Retra offers a range of reduction rings for the RFP, starting with the reduction ring which cuts down the strobe angle, making it easier to control the beam, e.g. for inward lighting. When diving in low visibility, you can stack up the macro rings to further reduce the beam angle, to help control backscatter (low viz snooting).

Diffusers-wise, there are three options: the wide angle and white diffusers both extend the beam coverage to approximately 130 degrees. The "wide angle" model also warms up the light to 4400K, which is well suited for blue water, making the water column bluer (rather than green/aqua). The white diffuser however keeps the original temperature of 4900K, certainly cooler, which is more suited to reinforce a green water color. The "shark" doesn't increase the beam coverage but will deliver even more warmth at 3900 K. This is best suited for shy pelagics on a blue background (think shark bellies).

Retra also offers a protective ring, which you would need to fit onto the strobes when not using any diffuser or reduction ring, to protect the front glass. In practice, I like so much the diffusers that I don't see myself needing that extra ring at all. When I need the strobe to be stable face-down (e.g. to change batteries), I will mount the reduction rings.

All in one, I always dive with a pair of reduction rings in my drysuit pocket, while some diffusers are mounted on the RFPs by default.

Snooting with the Retra Flash Pro + LSD combination

I really enjoy snoot photography and was excited to see how Retra's popular snoot would performs on their latest strobe.

I had tried an LSD snoot onto my Inon Z240 for a couple of dives, but I found this combination difficult to use, as the Inon's focus light is off-center which, in turn, meant I couldn't trust it to precisely aim the snoot. Rather, I would result to trial & error, or lock focus and snoot before looking for a suitable subject, which arguably hindered productivity.

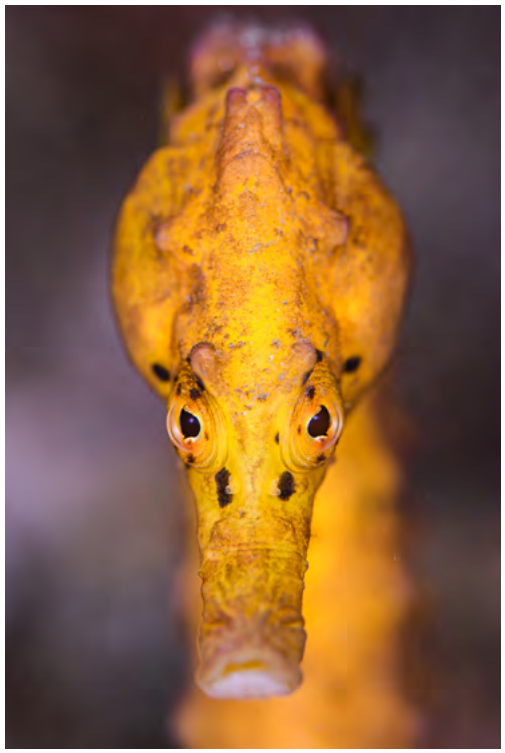
Since the RFP has a central focus light, I am happy to report this hinderance is all gone: the focus

The warm and even light helps nicely lighting big scenes, South West Rocks, Australia. Nikon D500 and Tokina 10-17 at 10mm. Nauticam housing. 2x Retra Flash Pro with WA diffusers, 1/60th @f/10, ISO 200

light allows to precisely predict where the center of the snooted area will be, which means I kept shooting with autofocus on, adjusting my snoot's position to each and every subject, making it possible to capture even swimming subjects like cuttlefish. I observed that 50% brightness was sufficient to aim with the focus light under daylight. At night, it can certainly be dimmed down to optimize battery life.

Another positive is the buoyancy of the LSD snoot: it is slightly negative, not too different from the Retra diffusers or reduction rings. This means that swapping between diffuser/rings/snoot is not only very fast (the locking mechanism can be operated one-handed), but also it will have little impact on the buoyancy of your whole underwater rig, which is key to shooting comfortably.

In terms of power, I found myself needing to shoot the RFP+LSD between 33% and 100% power, to achieve good lighting and black backgrounds in bright daylight (the smaller the masks hole you use, the more strobe output you need).



For macro too, we found diffusers useful when we needed a soft light, think low aperture shots with a nice soft bokeh, Sydney, Australia. Nikon D500 and 105mm AF-S. Nauticam housing. 2x Retra Flash Pro with WA diffusers, 1/200th @f/5.6, ISO 160

Knowing how powerful the RFP is, requiring this much power was somehow a surprise. This is due to the RFP's very wide beam: whilst the LSD is designed to capture and concentrate a lot of the strobe's light (it's an optical snoot), some of the beam just does not reach the optical system.

Depending on how extensively you use the LSD under daylight, and whether you always use the focus light to aim like me, it might be worth considering the supercharger.

Last but not least, the LSD has a generous working range, meaning there is flexibility in how far you position the LSD from the subject, while still getting even lighting (no hotspot).

Final thoughts

Having uses these strobes for 75h45 and counting, I would buy them again if presented with the same choice. I enjoy the creative possibilities they gave me, be it for the abundance of light/power available, or the wide range of accessories which allows to switch lighting techniques very quickly. I also like that they are easy to maintain, and well protected against the risk of flood.

Furthermore, the Retra Flash Pro is an evolutive platform. Since I purchased the strobes a firmware update has already enhanced the accuracy of the battery indicator, and more functional upgrades may come via the Bluetooth app. Also, Retra keep investing in their range of accessories, with some new reflectors just announced as I am writing this

The first photo was shot with 2 RFPs and wide angle diffusers (1/250th @f/8, ISO 100). Within seconds, I turned off one of the strobes and swapped a diffuser for the LSD, and was ready to capture long-exposure shots of the same male cuttlefish (0.8sec @f/20, ISO 100). Both captured with a Nikon D500 in Nauticam housing, in Sydney, Australia.

review.

This review reflects my personal observations and opinions, as well as thoughts from my wife and photography partner Lena. We have not been paid by Retra for this review and are not receiving any incentives on sales. We have purchased our two Retra Pro Flashes and most accessories on our own, Retra have provided the ones we missed to allow for a more complete review.

Nicolas Remy

www.nicolaslenaremy.com

www.facebook.com/nicolaslenaremy

www.instagram.com/nicolaslenaremy

Image lighting with 2x Retra Flash PRO.

Retra Flash PRO:

- **150Ws** flash power
- **500 lumen** pilot light
- **4900K** flash color temperature
- Recycle time with Supercharger: **1.9s (100%) - 0.9s (50%)**
- **Standard features:** Multi-level battery indicator, Leakage detector, High-Speed-Sync (HSS), Double O-Ring sealing, Bluetooth connectivity, 2 Year Warranty

Find out more and get your Retra Flash 👉 www.retra-uwt.com

INON UWL-95 C24 & Dome Lens Unit III

by Peter Rowlands

With the current trend towards slightly wider zoom lenses on compact cameras, it was inevitable that manufacturers would have to come up with new designs to maximise the performance of these new cameras.

Japanese manufacturer INON recently introduced their UWL-95 C24 supplementary wide angle lens which is a totally renewed optical design which supports shooting at the 24 mm wide end with compact cameras. The UWL-95 C24 is physically very similar to their well established UWL-H100 and is available in either 52 or 67mm thread fitting.

The standard UWL-95 C24 lens increases the field of view to a very useful 95° but with the optional Dome Lens Unit III this increases it to an even more useful 141°. In addition the minimum focus is an incredible 0cm which makes this a very versatile option for compact users. The Dome Lens Unit III improves the performance so much that I would suggest it should be thought of as compulsory rather than optional, finances permitting.

INON UK sent me a lens to review just after lockdown eased. Unfortunately that coincided with the onset of some seasonally autumnal weather with water clarity less than ideal but these are the sort of conditions in which supplementary wide lenses thrive because they allow you to get close to a large subject and still get it all in frame.

I used the INON UWL-95 C24 and Dome Lens Unit IIIG on a Sony RX100 Va in their MPK-URX100A underwater housing. The combination is a very neat and manageable combination but, being glass, it is a little nose heavy and would benefit from a small buoyancy collar. The clever people at INON also have available a Dome Lens Unit IIIA which is acrylic rather than glass so this will help the buoyancy and reduce the costs compared to the glass version.

As well as being lighter and less expensive, the acrylic port can be polished to remove any slight dinks which would not be possible with a glass dome.

Since the UWL-95 C24 is a threaded lens you will need to align the dome shade to avoid vignetting but this is easily done by loosening the screws and rotating the dome.

Once in the water, the UWL-95 C24 has to be unscrewed to remove any air bubbles from the rear of the lens and the front port of the housing. Being a fine screw thread this has to be done with care to avoid cross threading but once in place it is held securely.

The benefits of a supplementary wide angle lens are well documented but some manufacturer's

(Above) RX 100 Va with lens at 24mm
(Below) RX 100 Va with UWL-95 C24 and Dome Lens Unit IIIG

The UWL-95 C24 and Dome Lens Unit IIIG allows the full zoom range to be used which makes it very versatile. (Top) 24mm (Below) 70mm

designs do not allow the full zoom range to be used so check first before you buy. The INON UWL-95 C24 allows full zoom through from 24-70mm on the RX100 Va which makes this the 'go to' lens for all but super macro on compact cameras.

Optically most supplementary wide angle lenses produce the sharpest overall results at smaller apertures but I was pleasantly surprised by the overall sharpness at F4 with this INON combination.

The weight, size and cost benefit of a housed compact camera versus an SLR or even mirrorless for that matter are compelling especially for overseas travel and the UWL-95 C24 and Dome Lens Unit IIIG is such a good performing combination that photographic quality is not compromised either.

The INON UWL-95 C24 is £489.99, the Dome Lens Unit IIIG is £299.99 or the Dome Lens Unit IIIA is £169.99 so it probably costs the same as your compact camera and housing did but the way in which they will transform your image capability makes this purchase an investment rather than an indulgence.

Peter Rowlands
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INON UFL-G140 SD and SD Front Mask for HERO5/6/7

by Peter Rowlands

The INON UFL-G140 SD is a semi-fisheye conversion lens primarily for the GoPro 3-7 but also the Olympus STYLUS TG-Tracker, Sony FDR-X3000 and HDR-AS300 action cameras.

INON supplied me with a review lens for my GoPro Hero 7 black in their dive housing onto which attaches the INON SD Front Mask for HERO5/6/7. This is a well designed bayonet fit accessory for quick and easy mounting and removal of the UFL-G140 SD.

At its widest setting on land the GoPro Hero 7 Black covers 151° but underwater behind the flat port of their dive housing this is reduced to 94°. Whilst this is still usefully wide for most GoPro users, the full image potential of the GoPro will only become available if you use the INON SD Front Mask and UFL-G140 SD lens. This will restore the underwater angle to 140° and give an extremely wide depth of field which virtually eliminates the need to focus.

For the majority of GoPro users who want to expand the capability of their diminutive package, the first accessory they should consider is a base tray and handles, both of which INON manufacture and this simple non optical addition will make a significant improvement in overall image quality because the housing on its own is hard to hold still during an exposure or when shooting video. The base tray and handles transform the way the camera handles plus it provides the ideal platform to mount the SD Front Mask and UFL-G140 SD.

The INON UFL-G140 SD is not much larger than the GoPro dive housing itself so it provides a very neat package.

The UFL-G140 SD front acrylic dome has five layers of multi-coating on its inner surface which provides the same image quality of optical glass dome at a lower price and weight.

The SD Front Mask is well designed in heavy duty plastic and has an easily accessed button to unlock the bayonet to fit and remove the UFL-G140 SD. This is especially useful underwater because the lens must be removed and refitted to make sure there are no bubbles on the housing or the rear of the lens.

Underwater the base tray and handles make shooting much more manageable. The left handle is for holding while the right one acts as a leaning post for the back of your right hand. In this position it is ideally placed to press the shutter to take a still image or stop and start shooting video footage.

Back in the days of film the ‘go to’ lens for a Nikonos was the 94° 15mm UW Nikkor and this produced some ground breaking images but it was not until the 180° full frame fisheye lenses were housed behind dome ports that things really took off. The only downside was corner sharpness, the solution for which was either a small aperture or a large diameter dome.

(Above) Hero 7 Black
(Below) Hero 7 Black with UFL-G140 SD
(Right) The big advantage of a wide angle lens like the UFL-G140 SD is that you can get closer and still include a large subject. This results in a much sharper, punchier image.

It is no coincidence that most modern supplementary wide angle lenses are about 140° which is the design trade off between image quality and angle of coverage and the INON UFL-G140 SD is no exception. The other big benefit of this lens is the increased depth of focus from 4cm right through to infinity so everything will be in focus. The result is very much a point and shoot, hassle free combination.

The INON UFL-G140 SD together with their base plate and handles offers a very capable but very small and light outfit. The wide depth of focus will open up a whole new style of imaging with close focus wide angle.

If you are serious about your GoPro photography underwater, this combination will enable you to capture seriously better images.

The INON UFL-G140 SD costs £439.99 in the UK and the SD Front Mask for Hero 5/6/7 is £79.99.

Peter Rowlands
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We've got you covered!

Magic filters are now available in 3 options. Original Magic for use in blue water with DSLR and compact cameras with Manual White Balance, Auto-Magic for compact cameras in automatic point and shoot mode. GreenWater Magic for use in green water with DSLR and compact cameras with Manual White Balance. Prices start at just £22.

The Auto-Magic formula is now available in a Plexiglass filter that can be added or removed underwater.

www.magic-filters.com

Backscatter E-PL10 Octo Housing

by The Backscatter Team

Striking a balance between value, performance, and ease of use is the ideal trinity of underwater photography equipment. The Olympus PEN E-PL10 camera and limited edition Backscatter E-PL10 Octo Housing create a system that is not only more affordable than similar rigs, but also has outstanding shooting specs and image quality while staying compact and easy enough for even the first-time underwater photographer.

The Olympus E-PL10 can be shot like a point-and-shoot camera with external wet conversion lenses, or shot like an SLR with dedicated wide angle and macro lenses and ports. Keep it simple and versatile, or go for the best image quality possible – the choice is up to you.

Straight out of the box the system has everything needed to get started and can be upgraded and expanded to pull off any shot imaginable.

At only $699.99 for the camera with lens and $649.00 for the housing, it's truly the best bang for the buck in underwater photography.

The Backscatter E-PL10 Octo Housing supports both the Olympus E-PL9 & Olympus E-PL10. There is effectively no difference between these cameras, as the only significant change is the inclusion of some built-in art filter modes which won't be used for underwater photography anyway. The interchangeable lens of the Olympus E-PL10 is the biggest variable in overall system size, ranging from pocket-sized when using the Olympus 14-42mm EZ kit lens to more SLR-like with lenses like the 8mm fisheye, Olympus 60mm macro or even topside telephoto zoom lenses like the Olympus 75-300mm lens.

Even when fully equipped with pro lenses and dual arms for lighting, the Backscatter E-PL10 Octo Housing is barely any bigger than a compact (such as the beginner-favorite Olympus TG-6). Considering the well-laid-out ergonomics, interchangeable ports, included LED flash trigger, and vacuum and leak detection features, it's pretty astonishing that the overall housing size of the Backscatter E-PL10 Octo Housing is so small. It's easy to hold in the hand, or add the included extendable shutter release and operate it from a tray grip.

An Ideal Upgrade from TG cameras

If you're one of the thousands of underwater photographers who have fallen in love with their Olympus TG-series compact camera but are now ready to take their gear to the next level then look no further than the Olympus E-PL10. Any Olympus user will feel right at home with the familiar menus, controls, and operation of the camera.

The ability to swap between such a wide variety of lenses is the standout feature of this camera when compared to the Olympus TG-6 because it allows the user to get wider shots, more macro working distance, and sharper overall results. When shooting macro with the Olympus 14-42mm EZ and a diopter you'll have a much greater working distance to the subject than with

the Olympus TG-6, which will make macro shots much easier to pull off.

The Olympus E-PL10 offers full manual exposure control, which is a major advantage over the Olympus TG-6 when it comes to obtaining great underwater image results easily. This is especially helpful for wide angle background exposure control, which is where shutter speed control becomes essential. The Olympus TG-6 offers limited shutter speed control at best, and never without an Auto-ISO caveat. The Olympus E-PL10 can completely separate shutter speed from ISO just like any other fully manual camera providing the user with complete exposure control for the perfect image.

For shooters that are ready to graduate from their tried-and-true TG camera but aren't quite ready to go all-in for a full-frame SLR, then the Olympus E-PL10 is the best choice for a major step up in performance at a fraction of the price of other options.

The Olympus E-PL10 includes an interchangeable Olympus 14-42mm EZ power zoom lens. This lens on its own is about equivalent to the zoom range on most compact cameras. Just like compact cameras, the Olympus 14-42mm EZ lens must rely on wet-mounted external conversion optics to get the best results underwater. Without conversion lenses, the Olympus 14-42mm EZ is not wide enough for wide angle at 14mm, and not tight enough for macro at 42mm.

The Backscatter E-PL10 Octo Housing is about the same size as most point-and-shoot rigs, but features way more power and potential.

Even though it can be shot as simply as a compact camera with external wet lenses, the camera body also supports the full range of Micro Four Thirds interchangeable lenses. This provides an excellent array of sharper, wider, faster focusing, and tighter macro optics for pro-level image results and is easily the most distinct advantage of the Olympus E-PL10 over compact non-interchangeable lens cameras.

The Olympus E-PL10 produces satisfyingly sharp image detail and crispy resolution. High-key highlights don't look blown out, and dark shadows aren't noisy or grainy. Color saturation is vibrant and packs plenty of pop. Whether shooting backlit sunballs or black-background macro, the results across the board were excellent and among some of the best from current-gen Micro Four Thirds sensor cameras.

Balancing perfect foreground and background exposures is made much easier thanks to the full manual control of the Olympus E-PL10.
Olympus E-PL10 | Backscatter E-PL10 Octo Housing | Olympus 8mm | 1/125 | ISO 400 | f14

When compared to the Olympus TG-6, the larger sensor of the Olympus E-PL10 creates much sharper image detail, better dynamic range, and lower noise in low-light situations. Given the relatively minor size increase of the Olympus E-PL10 body, the user gets all the benefits of a larger sensor higher-end camera without adding significantly to the overall weight or underwater system size.

Thanks to the built-in LED flash trigger of the Backscatter E-PL10 Octo Housing, the Olympus E-PL10 can shoot rapid-fire by completely bypassing its own built-in pop-up flash. It fires more shots per second

The ability to shoot like an SLR with interchangeable lenses gives the Olympus E-PL10 a distinct image quality advantage over fixed lens compact cameras.
Olympus E-PL10 | Backscatter E-PL10 Octo Housing | Olympus 8mm | 1/200 | ISO 200 | f8

The simplicity of using wet-mounted conversion lenses can still produce stunning results. This shot was captured with the included Olympus 14-42mm EZ lens and AOI UWL-09 PRO wide angle lens.
Olympus E-PL10 | Backscatter E-PL10 Octo Housing | AOI UWL-09 PRO | 1/160 | ISO 640 | f13

than any compact or mirrorless that has to rely on a pop-up built-in flash, creating more opportunities to really nail the perfect frame in a quick-burst fast action sequence. This camera will fire as fast as the paired strobe can recycle, so at lower strobe power it can do some pretty astoundingly fast rapid shooting. This also has the benefit of keeping the housing small because there does not need to be room to accommodate the pop-up flash.

The tradeoff of this rapid-fire benefit is that there is no automatic TTL strobe exposure.

Autofocus speed is snappy and accurate in both wide angle and macro scenarios. Whether tracking moving a subject through the frame or locking on to the eye of a close-up critter the camera does a great job of sticking the sharpest part of the frame right where desired. Using dedicated wide and macro lenses will yield even better results than the kit lens with wet-mount conversion lenses.

The controls can be configured to enable back-button autofocus operation. By separating the focus control from the shutter button we gain a huge advantage over compact cameras and take the next step towards SLR-like camera control. This custom control assignment is easy to set up in the menu and can be simply set once and forgotten about.

The Olympus E-PL10 can sync with strobes at up to 1/250 for a wider range of shutter speed control than even some full-frame mirrorless and SLR cameras. Many comparable (and even some much higher performance) cameras exceed their sync speed with strobes at slower shutter speeds than 1/250, preventing the user from having as wide of a range of ideal exposure settings to match their underwater conditions.

The camera and housing controls are intuitive and easily ergonomically accessible. The Olympus E-PL10 only uses one control dial which can be assigned to shutter speed or aperture, but we prefer to adjust these by using the multi-function directional control pad. Just press ‘up’ to toggle the aperture and shutter speed settings, then use ‘left’ and ‘right’ to adjust aperture and ‘up’ and ‘down’ to adjust shutter speed.

The Olympus E-PL10 offers a maximum recording spec of 4K at 30p or 1080HD at 60p. There is a relatively heavy 4K crop factor, so for general use, it is recommended to set the video to 1080 60p. 1080 resolution

The housing includes a 67mm threaded front port for the Olympus 14-42mm EZ lens and built-in LED trigger and vacuum system as standard. The housing is also compatible with optional UMG magnifiers.

Olympus E-PL10 | Backscatter E-PL10 Octo Housing | Olympus 60mm Lens | 1/250 | ISO 200 | f22

will be easier to work with than 4K for most amateur and hobbyist editors and offers more flexibility for slow-motion effect, which is always a favorite among underwater editors.

Executing an ambient light custom white balance is easy to do, and produces great looking natural-light color down to about 45 feet. There are 4 custom white balance banks for storing multiple depth color settings, or for shooting with or without video lights.

One minor quirk of the camera is that it must be set to photo mode in order to capture a manual white balance. It's still possible to cycle between the 4 stored banks while in video mode, but the camera must be set to photo mode in order to actually capture a new white balance.

5-axis in-body image stabilization assists handheld video to appear buttery smooth. If your rig is perfectly trimmed as outlined in our Buoyancy Solutions Article, then the extra layer of stability provided by the camera itself is enough to make your underwater wide shots look cinematically stable and graceful. Don't forget to slow down that 60p footage to 30p playback for even more stabilization.

Macro video shooters will still need a tripod for rock-solid results, just like every other rig out there. Fortunately, the AOI housing is small enough and light enough to work great with a simple Joby Gorillapod, eliminating the need for bulky, heavy aluminum tripod legs and a plate.

We teamed up with AOI to produce the Backscatter Limited Edition Octo housing. As if the simple operation, compact and well-laid out ergonomics, affordable price point, and changeable ports, and built-in LED trigger and vacuum system weren't enough, we just had to go and make it the coolest looking housing around too.

The housing includes a 67mm threaded front port for the Olympus 14-42mm EZ lens. Pair this port with wet wide or macro lenses for compact-like versatile shooting. Swap

this port out for dedicated domes or extended macro ports for prime lenses and you will be ready to shoot any subject large or small. The housing is even compatible with older Olympus PEN series housing ports, so if you are upgrading from one of those classic systems then you already have some compatible accessories.

Mount a double flip holder on the 67mm threads to be able to quickly swap between macro and wide on the same dive. If you don't want all that bulk on the front of your port, use the AOI QRS (Quick Release System) of bayonet mounts for quick-disconnect of lenses which can then be stored on a control arm or in a pocket.

One of the coolest features of the housing is the Multi-Control Device. This USB-rechargeable unit is what controls not only the LED flash trigger but also the vacuum and moisture detection for peace of mind while underwater.

The housing is also compatible with UMG magnifiers. Both the AOI UMG-01 and AOI UMG-05 are compatible with the Backscatter E-PL10 Octo Housing, meaning that they can carry right over from a TG rig to this one. The Olympus E-PL10 and Backscatter E-PL10 Octo Housing are the "best bang for your buck" in underwater photography. Together they can be operated as easily as a compact camera by utilizing wet-mount conversion lenses. Alternatively, the system can be set with dedicated lenses and ports for either wide or macro just like an SLR, but at a mere fraction of the overall SLR system price, Starting at $1,349.99 for both the camera, lens and housing.

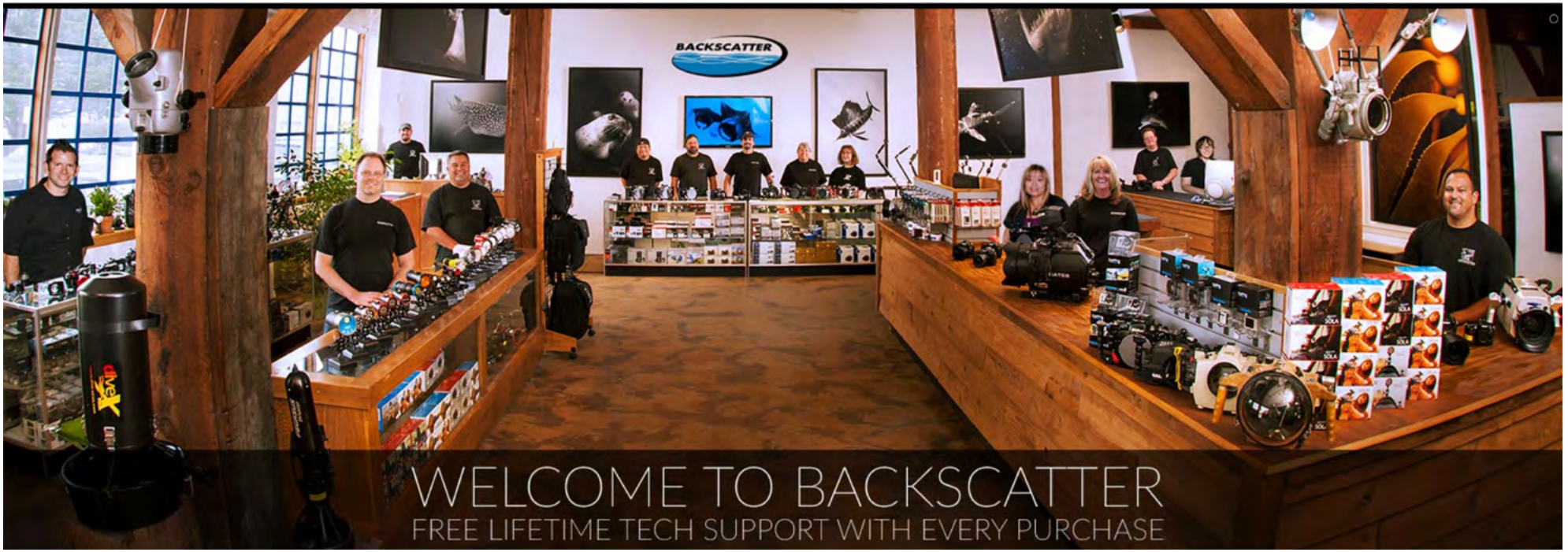
The image quality produced by the camera is just as good as any other current Micro Four Thirds sensor camera, with sharp detail, vibrant colors, and great dynamic range detail.

This rig is both an ideal fit for new underwater shooters seeking their first rig, or as an upgrade for someone who desires the next step up on the performance scale from a Olympus TG-6 or similar non-interchangeable lens camera.

The custom tentacled graphics of the Backscatter Limited Edition UH-EPL10 Housing are sure to turn heads and get some cool points, as well as serve as an easy way to pick your rig out of a crowded camera table.

This is our favorite system for striking an ideal balance between affordability, high-end performance, and simple ease of operation.

The Backscatter Team
www.backscatter.com



Chasing M2 and Qysea v6 ROVs

by Peter Rowlands

Ardent UwP readers will know that I have a 'bit of a thing' for ROVs (remotely operated vehicles) and I have reviewed and reported on several over the years.

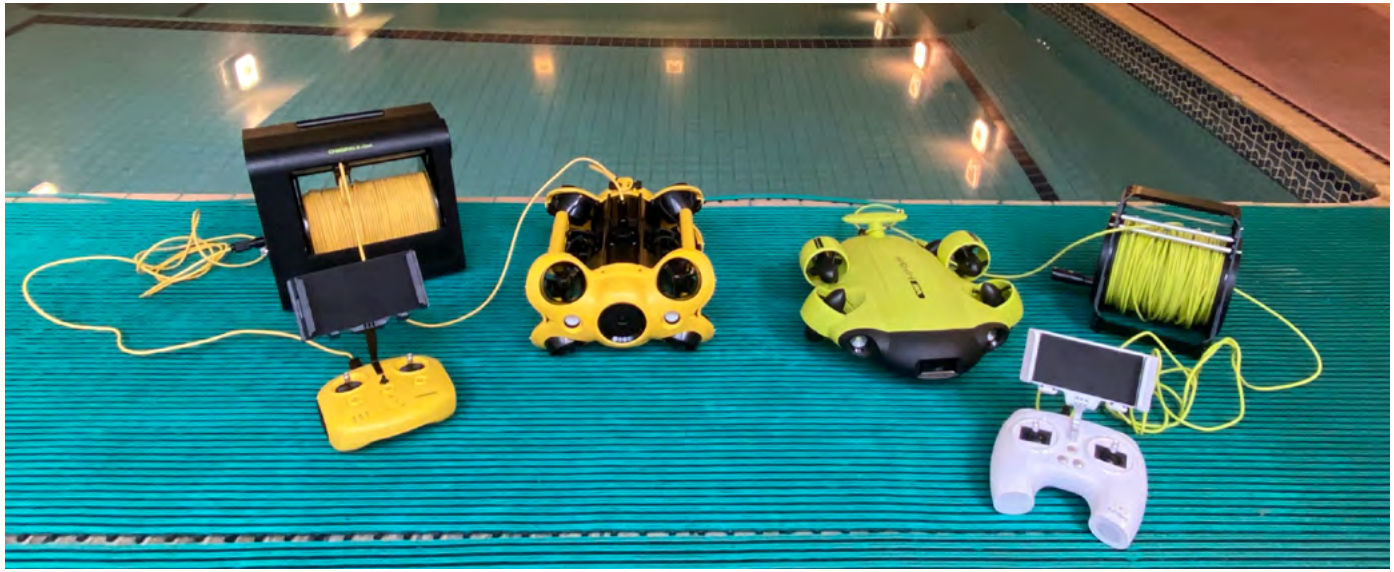
In particular I have had a good relationship with Chasing ROVs (www.chasing.com) from their original Gladius to Chasing Dory, Gladius Mini and now the M2 which, I have to say, is their most impressive machine to date.

UK agent AlphaGeo (www.alphageouk.com) were kind enough to send me a review machine and my first trial was in a swimming pool. They sent me a 'full spec' package (£2499) with the optional E-Reel (£649) but without the Robot Arm (£449).

The setup is even simpler than previously because the WiFi electronics are combined into the hand controller which eliminates another set of connections and wires. This is a really big improvement from a practicality and reliability point of view.

Having 'flown' previous Chasing models I was at home right from the start. The only need was to change the joystick configuration from JPN to USA settings in the menu to make them as logical as a DJI drone.

The M2 owes much of its design philosophy to the working class ROVs from the offshore exploration industry but miniaturised. There is no external fairing as with previous models and it is this which makes it such a versatile mover underwater.



The Chasing M2 with optional E Reel is on the left and the Qysea v6 with standard reel is on the right

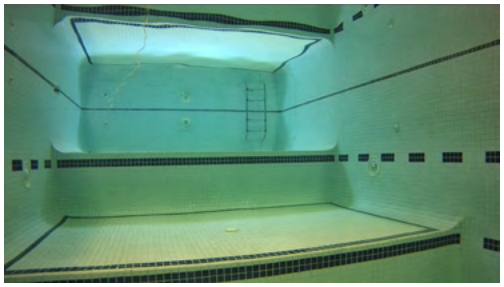
Fairings are designed to aid movement through water but they can create unnecessary drag in certain directions. The fairing-less M2 moves equally well in any direction and with its 8 thrusters that really means in ANY direction at equal speeds.

Being able to be positioned at any angle is very useful but it can be disorientating especially when the M2 is out of vision at depth but fortunately there is a 'Return to level' button on the controller which is an absolute godsend because, as the name implies, it returns the M2 to a level posture on the same heading and holds it there. It's a bit like turning an electronic device off and on again! In open water I found myself using this facility time and time again so I think it is a very important and impressive capability.

The swimming pool environment is perfect for starters as it's clear, comparatively shallow and you can see the machine at all times. It's the perfect visual feedback to help you get 'a feel' for the joysticks and what they do. Even as an experienced Chasing 'pilot' the M2 was a cut above in terms of performance both at any angle and any direction. Very responsive yet when left 'joystick-less' it stayed put in both depth and heading, again just like a DJI drone.

My primary interest in ROVs is to look for interesting sites without the physical and time limitations associated with scuba diving and the M2 fits the bill perfectly. It can be tilted down (or up or any angle, in fact) to look towards the seabed and when the 'forward' joystick is operated it proceeds at that angle and at that depth. This is perfect for rapid progress over a flat site. Previous models, and other ROVs, would maintain the angle but go deeper, pushed down by the water movement over the fairing.

The M2 battery has a removeable battery so if you are away from power you can take a spare battery (or more) to increase your work time



The lens covers 152° and there is very little distortion.

The M2 is very stable and easy to control around delicate marine life but, in common with most small ROVs the two lights either side of the camera do create backscatter in all but the clearest of water.

The M2 has been improved in several ways over the Gladius Mini but I think it unfair to compare the two directly because, as previously stated, the M2 owes its design and performance to working class ROVs whereas the Mini is aimed at the more recreational market.

As an existing Gladius user I was pleased to see that the M2 now has a removable SD card for easier transfer of image files, especially the larger 4k video files. In addition there is a rear 'cable post' for looping and retaining the umbilical taking the strain off the plug-in connector and providing a more natural flow for the umbilical. In addition the M2 with its open frame has easy to grab lift handles on all sides making lowering and retrieving it very positive and therefore safer.

The other big design departure and improvement is that the M2 has a removable battery so if you are away from power you can take a spare battery to double your work time.

Photographically not much has changed because the Mini was already very good with 4k video/12mp stills but, and I think this is a significant change, the angle of view is now a very useful 152° rather than the 94° on the Mini. This is much better for viewing sites and a very productive improvement. In addition the F1.8 lens improves low light performance.

Speaking of light, the M2 has two 2000 lumen LED lights (three levels) which are very useful in clear water but, as they are fixed close to the lens, they will create backscatter in turbid water.

Operating the M2, or any ROV for that matter, from a boat is much more complicated than an indoor pool. The differences are purely physical in that there are more forces of influence at work i.e. the boat movement, surface wind and underwater current.

The boat movement and, to a certain extent, the surface wind are solved by anchoring but the

Local underwater photographer Neil Hope and I had a fun 'dive'. I was able to see him through the ROV lens so he was able to direct me to the correct pose. For me as the ROV pilot it was like I was diving with him and Neil said it was like having a well trained puppy so we naturally nicknamed the M2 "Rover"!

Filming salmon on the River Dart

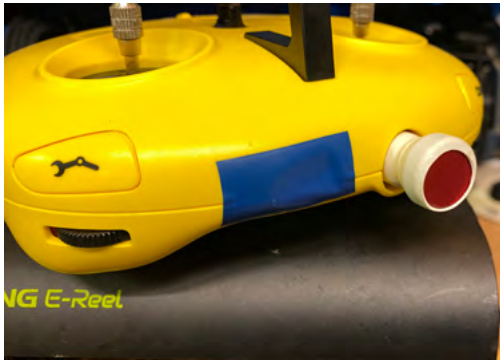
underwater current, if significant, will cause a loop/arc in the umbilical which will increase drag even though the cable is not that thick. This is mainly because the umbilical is designed to float and, for the most part this is good because it prevents snagging underwater but the downside is increased drag.

To try and solve the drag problem we improvised a 'drop weight and loop' which effectively deploys the ROV as if it were exiting from a 'garage' on the seabed. This has two big advantages - firstly you know where the ROV is starting from i.e. directly underneath the boat and secondly it significantly reduces the looping drag mentioned previously.

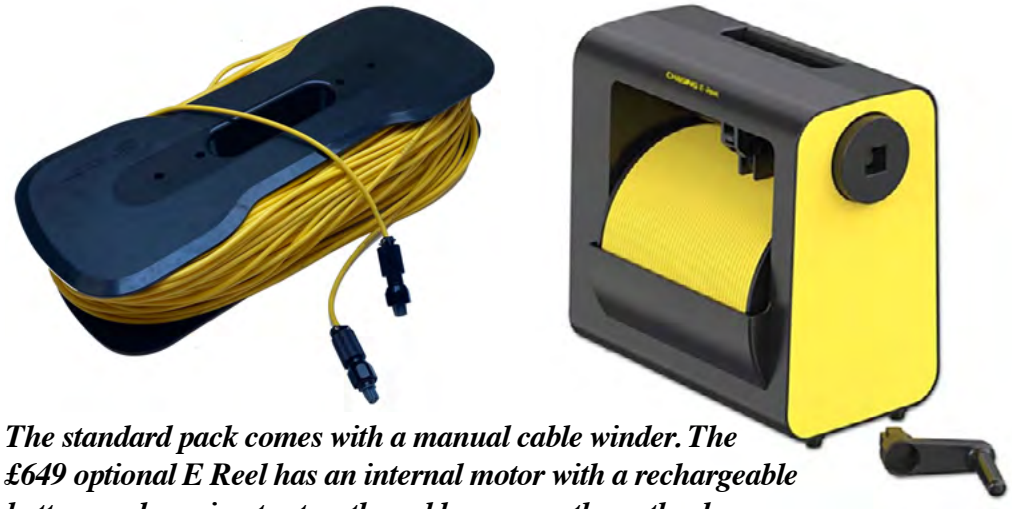
I took to the M2 like the proverbial duck to water and it is a major step forward in terms of set up and easy deployment. I had the feeling of being totally in control but when I needed to stop for a while to take stock I just let the joysticks go and the M2 stayed put while I decided what to do next. Flying any ROV, or air drone for that matter, is quite stressful to begin with and however experienced you are there is always a fear of snagging especially on a varied terrain seabed.

During my time with the M2 I was able to give it a varied workout from filming salmon from the riverbank in fast flowing water, locating an anchor on the seabed which we didn't know about and finding new dive sites in places we wouldn't normally have bothered to look. In short it was a most productive machine which I was loath to return to the UK importers!

There are some features and physical improvements which I would have liked. The first is better end caps for the unplugged cable connectors. With freshwater this is not a big deal but with saltwater it is a whole different ballgame and it would be much better to have proper screw on end



I taped up the exposed HDMI socket to protect it from saltwater and improvised a better socket cover for the ROV and controller.



The standard pack comes with a manual cable winder. The £649 optional E Reel has an internal motor with a rechargeable battery and gearing to stow the cable very neatly on the drum.

caps to eliminate any saltwater ingress which would cause intermittent electrical connections. This applies also to the multi pin HDMI port on the controller which, when not in use, is totally exposed to the elements. I put some tape over it and also improvised with some bigger, more secure push on end caps.

Another improvement I would like to see is some form of indication as to how much umbilical is out at any time. This could be something as simple as markings on the cable itself either by colour coding markings every five or ten metres.

The M2 has a VR setting for Virtual Reality goggles and I bought a suitable pair which effectively allows a split image to be viewed on a mobile device slotted into the headset. The theory is sound and the image is certainly viewable but the way the app splits the image results in the gauges (heading and depth, most importantly) being hard to see. I have used other ROV headsets and this is not the case so it would be nice to see some work done on the app to improve this and then it could be very effective, especially in bright sunlight where a mobile phone or tablet is very hard to view clearly.

Another design which I would like to see improved is the hand controller (and this is true for every ROV I have tried), especially for use on a boat. Ergonomically it handles well and can be retained with a neck strap for security but if you want to put it down to attend to anything else, it is very unwieldy, especially with a tablet which makes it quite top heavy.

Chasing E Reel

The rechargeable E Reel is very impressive and whether it is worth £649 to you is your choice but I found it extremely useful and neat; in particular the gearing which stores the cable. The alternative is the standard rectangular 'manual' spool which I had on the Mini and which comes as standard on the M2.

Whilst this basic spool is very simple and effective with nothing to recharge or go wrong, the E Reel is one of those luxuries which once tried will always appeal. I guess the ideal would be the E Reel without the motor which would be much lighter, cheaper and easier to operate with a manual handle but still have the excellent self stowing gearing.

The VR setting on the M2 gave a viewable image but the onscreen gauges were not easily visible and when you are operating with the goggles on you have no other visual indicators so these gauges are important.
I'm no IT guy but I would thought this is someting which could be sorted out in the App and, if done so, would provide an excellent alternative to trying to view a smartphone or tablet screen on a sunny day.

Qysea provide proper screw on end caps which cannot fall off and provide watertight cover. In addition the rear of their connectors has a short strain relief mould and the seal looks as if it is around the diamater of the cable.
The M2 umbilical cable (and the Gladius Mini) on the right comes with no protection caps and relies on a flat crimp which distorts the cable at the point where it has the most strain.

Chasing M2 v Qysea v6

By a strange quirk of fortune I learnt that a business friend of mine here in Plymouth had just acquired a Qysea v6 which is a similar ROV to the M2 but with six thrusters instead of eight. He agreed to lend it to me for a few days and this gave me an opportunity to compare the two and the following has been a welcome opportunity for me and it says a lot about this evolving market and can offer you some timely advice if you are interested in buying either ROV.

The Qysea v6 is their second ROV; the P3 being the first and according to their website they are working on a much more photography aligned unit, the Fifish Pro Zen1.

For underwater photography there is very little difference between the M2 and v6. They both have 1/2.3" sensors but the M2 has an F1.8 lens rather than the F2.5 on the v6 and finally the M2 has a 152° coverage whereas the v6 has 162°

The v6 is similar in that it has a cable reel and joystick controller/ wifi unit to control the v6 and stream the footage to a smartphone or tablet. Qysea don't offer the option of an E Reel but their standard manual reel is very effective and much better than the M2 standard rectangular reel. If it had self spooling gearing it would be perfect :-)

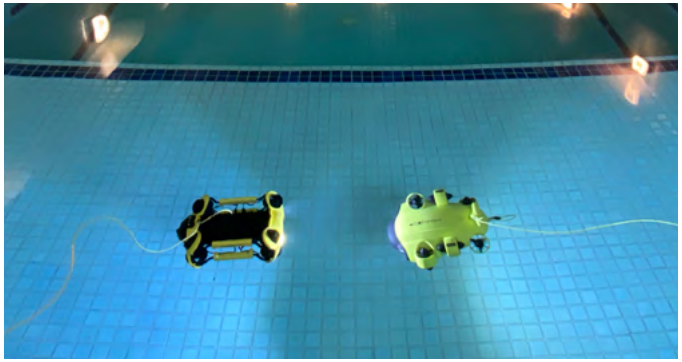
Setting up the v6 is pretty much the same as the M2 but the v6 app offers many more options in terms of joystick controls and the controller also has physical switches for various levels of capability which they confusingly call A, S and C - Attitude, Sport and Combination.

When I first set up the v6 I found that there were too many choices on the app settings in terms of joystick controls and this got me off to a frustrating start and the online manual was not exactly clear but more about manuals later. Eventually I found the right one for me which mimics a DJI air drone and this is UAV USA.

With the joysticks controls set up how I like them the learning experience took a much better turn and I soon felt in control once more.

The v6 is very responsive and best used in the A mode initially until you get used to its basic capability and, for me, this is actually provides most of what I am looking for in terms of control. In S mode you can do barrel rolls and 360° rotation which is impressive but I suspect only needed in a limited number of situations but the good thing is that you have the choice.

There are two main things which I personally look for in an ROV; firstly the ability to tilt slightly down and secondly to then go forward at that depth. This makes checking out a flat seabed easy and if any large objects or terrain comes into view



the left joystick can be pushed forward to bring the ROV up and over the obstruction. The v6 does this but it took a while to figure out how to achieve this because, once again, the manual is not crystal clear.

The other main requirement is the ability to return the ROV to "level" i.e. no up or down tilt and no lean left and right. There was nothing in the manual about how to achieve this and it was only by e mailing Qysea's very helpful support team that I was told that this was achieved by double clicking the "Posture" icon in the bottom left of the viewing screen. The M2 has a dedicated button on the controller.

Once this capability was now known, I felt that I had got to where I had been with the M2 right from the start. It had taken a lot of time and frustration but perseverance got there. I was in the fortunate position of not owning the v6 so didn't have that "Have I chosen the wrong one?" scenario and the support team at Qysea have been excellent.

The last capability of the v6 is the VR mode and this is very impressive indeed and almost spooky! In C mode and VR set on the app, the supplied VR goggles provide an excellent view through the camera, the heading, depth and temperature which is most of what you need. The goggles are great for viewing on bright sunny days. The spooky part is that when you move your head to the left, the v6 goes left and vice versa! Look up and down and it looks up and down!

I have only tried the VR in the pool but I suspect it will be very useful on a boat too. The only proviso being is that you need someone else to handle the umbilical and keep an eye out for other boat traffic.

I suspect the v6 is subject to ongoing development for there are regular app and firmware upgrades. Unfortunately the same doesn't apply to the manual so let's talk about them now.

Instruction manuals

As in so many cases with emerging technology, producing a comprehensive instructional manual can be a time consuming task especially when improvements are being introduced rapidly and I suspect this true for both Chasing and Qysea.

The M2 manual is just 7 pdf pages whereas the v6 is 24 but it doesn't include some of the basic functions of the unit and there are several advanced features which don't even get a mention. This can be very frustrating especially when you are producing a review which might influence a future purchaser.

Hopefully the instruction manuals will be developed at the same pace as the ROVs. I know there are YouTube videos from users but this is no excuse for a comprehensive manual for what are very capable and versatile machines.

Where to buy

If you are in the market for either of these ROVs I would strongly recommend that you buy it from the importer in your country. These are very technical machines and, should you need spares or repairs, it is much better to deal with your importer rather than the manufacrurer in China.

Conclusion

As I am in the market to upgrade my Gladius Mini, this was a real world review.

The UK prices are £1899 for the standard v6 and £2499 for the M2 so the v6 is considerably less expensive and does come with a VR headset but these are £20 on the internet.

On price and like for like specification the v6 is undoubtedly the best value for money but I liken this to a Mac v PC decision. The v6 is less expensive, lets you get under the bonnet to customise it and performs equally well. The M2 on the other hand is more expensive and less customisable but, like a Mac, it looks great and provides what they think you want.

The problem for me is that I've been a Mac user since 1987 :-)

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Chasing M2
www.alphageouk.com

Qysea v6
www.mantsbrite.com

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HMS Victory

with Dominic Robinson

interviewed by Peter Rowlands

I was very impressed with your recent images of HMS Victory and thought UwP readers (and myself!) would be interested to know more about you, your underwater photography and the dive itself. Did deep diving and underwater photography start at the same time or did you turn to a camera to record your dives?

Prior to taking up deep diving, I spent many years as a recreational diver during which time I developed a gradual interest in underwater photography. Initially I started with a series of fairly standard compact cameras in their 40m manufacturer produced housings which I would take with me mainly to record images of the people I was diving with. On one very memorable occasion, we spotted a basking shark halfway to the Eddystone so all jumped in with snorkels. This resulted in a very cherished photo of the shark emerging from the plankton with its mouth fully open which is an experience that I've never managed to repeat since.

About 7 years ago, I started diving with a CCR and once I had become comfortable with this configuration then I continued to take photos at normal recreational depths. As I became qualified to dive deeper then I wanted to record my experiences, the people I was diving with and the things that we were seeing. In order to do this I needed a significantly better, and more expensive (!) housing, to withstand the pressure at those depths. This led me to research and buy a new setup which is essentially the one that I have now.

What camera equipment did you use for the images and what was the reasoning for choosing it?

I use a Canon G7X Mk II in the Nauticam Housing with the short port and Inon UWL H100 lens. Light is provided by two ebay Chinese video lights on double 6" arms. Prior to this I had a similar setup using the Canon G7X Mk I but I had a chance to upgrade relatively cheaply about 12 months ago which I'm very pleased with. I'd imagine by the standards of many underwater

45 nautical miles south of Plymouth in the UK lies the remains of HMS Victory in 78 metres of water. Dominic's dive had 38 minutes bottomtime and was followed by 3 hrs and 8 mins decompression.

The first-rate warship was launched in 1737 with 100 bronze cannons on its three wooden decks. It was the predecessor to Lord Nelson's Victory. More than 1,000 sailors died when the top-heavy flagship sank in a storm in 1744.

The wreck was found in 2008 by Odyssey Marine Exploration, a US deep-sea salvage company.

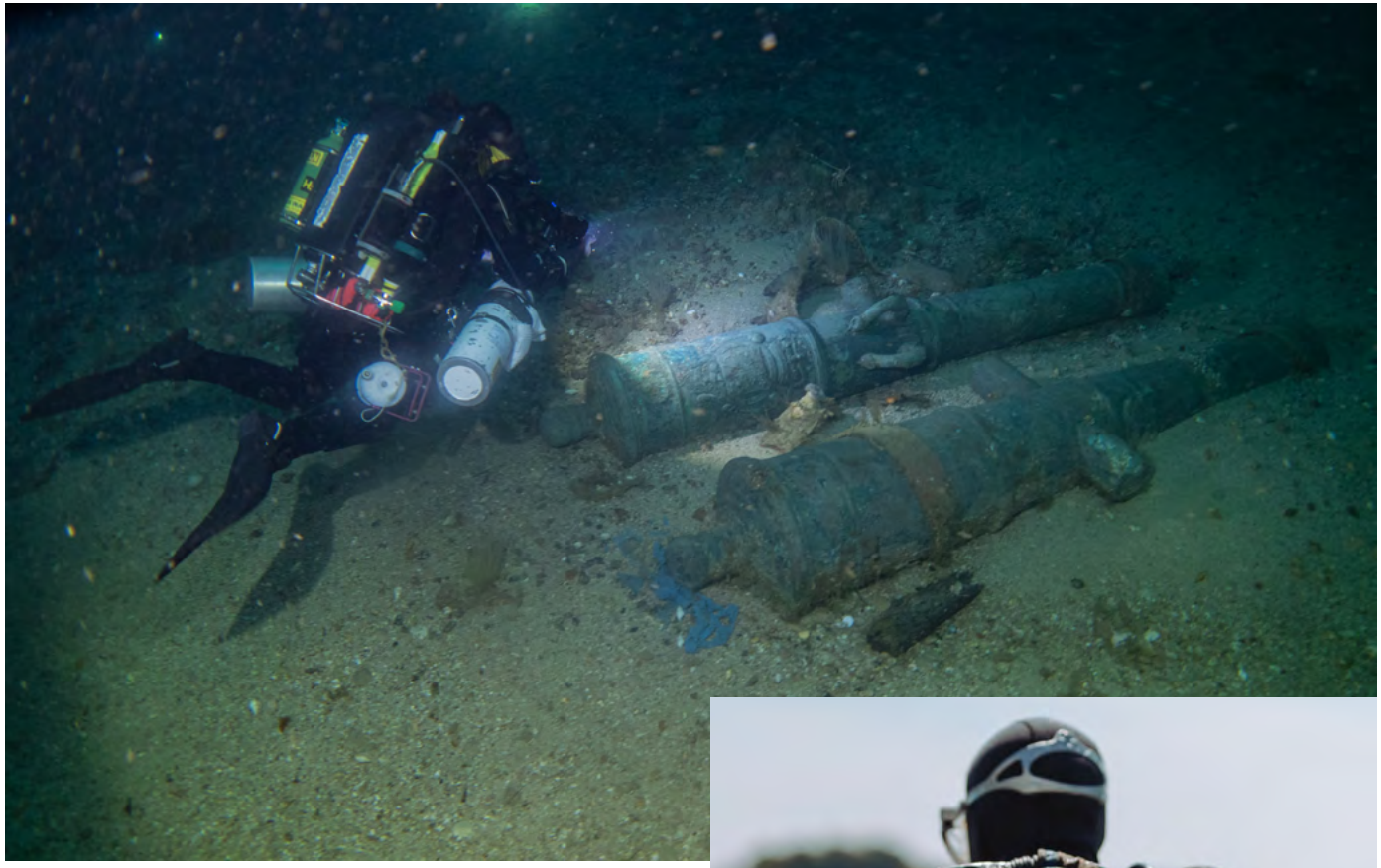
photographers that this isn't a particularly high end setup but I'm not trying to get top end photographs and don't have the resources to achieve this anyway. Technical diving isn't a cheap hobby and I have a young family so I need to have an appropriate balance. Overall I feel this setup meets my requirements very well.

I've used Canon cameras for a long time and have always had a good experience with them. A key requirement for my setup was that I wanted to stow it away at points on my dive which meant that it couldn't be too bulky. Having flooded a camera in the past, I also needed to know that I could buy a replacement relatively cheaply and easily off e-bay if necessary. Combined with the need to keep cost down this led me to look at high quality compact cameras from well known manufacturers which were known to perform well underwater so the decision came down to either the Sony RX100 or the Canon G7X. My research indicated that there were relatively few differences between them so the last element was that I'd previously used Canons so the menu system was one with which I was familiar.

The housing wasn't difficult to choose as it had to go as deep as possible which at that time meant the Nauticam! I can't really remember why I chose the UWL H100 but I suspect it was a slightly belated attempt to keep the cost down to what I considered a reasonable level whilst still having a fish eye.

Your rebreather looks very neat compared to some I have seen. Was this chosen with underwater photography in mind?

Thank you and this is something that I try hard to achieve. The complexities of rebreathers



and associated equipment means that for safety reasons it is a very good idea to have a setup that is as streamlined and well optimised as possible. As an instructor, this is also something I try to instil into my students as well so that means my own equipment has to be at a role model level.

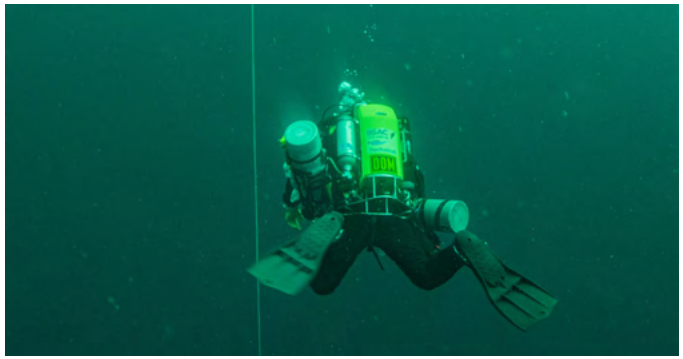
Of course, there are also significant advantages to having an ergonomic setup when it comes to photography as well. Unlike my perception of other photographers, I don't spend the entire dive taking photos so my camera will spend a significant part of the dive clipped off on my shoulder. This allows me to enjoy the simple pleasure of doing the dive

but then if I come across something that I think will make a good photograph then I can unclip the camera and try to capture it. On a deep dive you will typically have 25-35 minutes bottom time so every moment counts and it is important that I can transition between the two roles swiftly. There are dives that I do when I don't manage to get any photos at all due either to the conditions, not finding anything suitably interesting or being distracted by looking at other things.

It is also important that the camera doesn't impede operation of the CCR or any of my emergency actions. The day after the dive on HMS Victory I was doing a 73m dive when the electronics in my CCR ceased operating which is clearly a very dangerous situation. I was also carrying the camera but was able to revert to breathing off my open circuit bailout cylinders as I returned to the shot line and then carried out an ascent. It went so well that I even managed to get a couple of selfies at the final decompression stop and my buddy took one of me looking very pleased once we returned to the surface.

I presume that the Victory dive was planned well in advance. How did you become involved and was this your first dive on her?

To the best of my knowledge the Victory has only been dived three times which is partially due to secrecy surrounding the location but also the practical difficulties of organising a dive. Not only is it a very long way out (45 NM), very deep (78 m) and located very close to the shipping lane but it also has significant tidal movement. This all means that lots of individual factors have to come together at the same time for it to happen.



I became aware that a group of divers using a boat that normally operates from Portland had visited the site in summer 2019 which gave me the idea that perhaps it could be achieved from Plymouth. Over the winter, I floated the idea past Danny Daniels who operates Red Alert out of Fort Bovisand. We often use him for our deep charters and I knew that as an ex-matelot clearance diver with a keen interest in history that he'd be unable to resist. This proved to be the case so we agreed that if conditions permitted then we'd try to give it a go.

Fortunately early in September, everything aligned perfectly with neap tides, a lunch time slack, very light winds and a group of divers who were very keen to do something very different.

The technical group I dive with are mainly from the Plymouth Sound BSAC club but we also describe ourselves as Guztec. This is a combination of the Naval slang word for Plymouth (Guz) and tec for the technical diving that we do. Fortunately despite a late start in the year due to COVID-19, we'd managed to get plenty of deeper diving

completed before the opportunity to dive Victory came up which meant that we were ready for that sort of depth. For all of us, it was our first dive on HMS Victory and it is likely that less than 20 people have ever dived the site which makes it particularly special!

Were you the only one with a camera and with such limited dive time I presume your buddy was prepared to pose every now and then? Did you have a photography plan?

I chose my buddy for the dive because she is also a photographer and so could be expected to pose when she could see that I was taking photos. We also agreed that we'd swap roles so that she could get a few pictures of me as I didn't want to miss out on a photo with one of those stunning and unique brass cannons. She did have my old camera and housing but we agreed that it would be used to take video instead which is what she did.

Before the dive, we did agree that photos with the cannon were required for all six of us but it didn't really end up like that when we got down. This was probably because there hadn't really been enough agreement on a running order and where everyone would wait when the photos were being taken. As a result not everyone had their picture and some of those that did get taken had other divers in the background or swimming through the photo.

It is definitely a lesson for the future to be more organised with a better photography plan especially as several archaeologists were very interested in the site. They were hoping to get specific types of photographs which showed the site from above so didn't find the ones showing conger eels poking their noses out of cannons to be that useful.

Is photography the sole purpose of these sort of dives and what is the motive for shooting these images.

I consider myself to be a diver who takes photographs rather than the other way around.

My main motivation is to record the dive so that I can remember it in the future but there are also two other aspects. The first is that I like other people to experience what we have seen which I know very few will get the opportunity to do but I also use my images to encourage other people to do the sort of diving that is my passion. I think social media is particularly important for the latter which is why I like to share the images on Facebook groups such as UK Vis reports and the BSAC Technical page.

We're always trying to encourage people to join the Plymouth Sound club and also consider BSAC for their technical development so I think the images are also very useful in promoting both of them. Many of my images are also being used to illustrate parts of BSAC diving manuals that are being produced which I'm very proud about.

The ambient light at that depth must be quite low. What settings do you use for the available light shots?

We were incredibly lucky that the ambient light on the Victory was about as good as it gets at that depth. Not only were we diving it at nearly lunchtime so the sun was directly overhead but the water was also incredibly clear without any sign of plankton or a thermocline in the water column. Although everyone was using torches, there was enough light to do the dive without them.

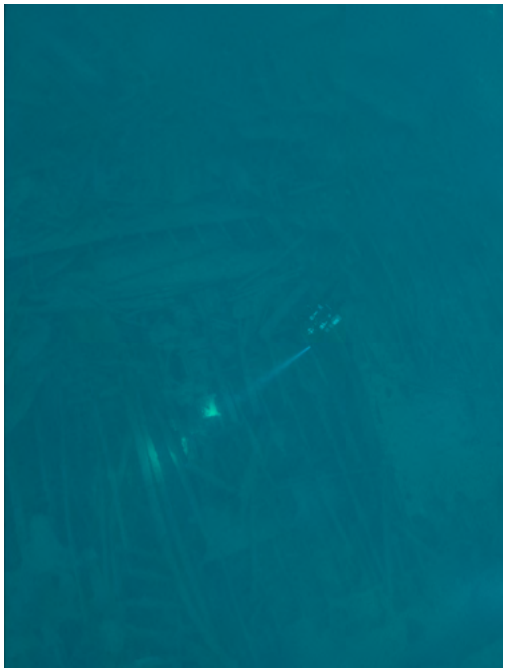
I feel something of a charlatan when I reveal that I put the camera into P mode so it auto selects

everything for me. Partially this is down to my own limitations as a photographer but also as I simply don't want to spend the time adjusting settings underwater that would be necessary if I set the camera up manually. Like much of my photography, I'm not after the perfect solution but something that produces the best possible solution with a relatively low level of investment and I believe that this is what I achieve.

What was the reasoning behind using a video light rather than a strobe for additional lighting?

I've previously tried to use a strobe but really struggled to get photographs in a timely fashion that didn't have horrendous amounts of backscatter.

The small screen on the G7X means that it isn't always possible to get a good idea if that has been successful so I find that the video lights are much more effective for producing results easily. It also helps that I can look above the camera to get a feel for how the picture will come out which isn't something I can do with a strobe.. Possibly if I was a better photographer, or spent more time learning, I'd be able to do better with strobes!



Thinking more about the available light shots do you do any post processing and, if so, are you willing to reveal more :-)

Unsurprisingly I take all my photos in RAW mode and then upload them to Lightroom Classic which is where I do the post processing.

The initial step is to brutally cull any photos that I don't think will come up well although I'm much more careful about doing this as I once was. On my last trip to dive the wrecks off Malin Head, I took a photo looking down on a wreck which was about 20 metres below me at 85 metres deep. In Lightroom the photo looked as though it contained nothing so I almost got rid of it but thought I'd just have a little play. Much to my amazement the result was awesome and it is still one of my favourite pictures!

I normally use the White Balance Selector (dropper) tool to correct the white balance before adjusting light levels using Highlight/White and Shadows/Black. If necessary, I also adjust the exposure and contrast sliders until I achieve something that seems to be suitable.

To conclude I then use the Presence sliders to produce a final photograph that I'm happy with.

After processing, all my photos get uploaded to Google Photos which I use as a repository and allows me to easily share with others via different communication means.

Thank you, Dominic, for your insightful answers which are very illuminating (pun intended) and what's refreshing to me is how you don't allow the photography to dominate the dive. Congratulations on your achievements and I look forward to enjoying your future images.

Peter Rowlands
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Tamariu - A Fisherman's Cove

by Arnau Argemi

To talk about Tamariu is to talk about a cove of an immense calmness and cold winds in the winter and radiant sun and tourist activity in the summer. It offers anything from deep, dry-suit dives suited for experienced divers to diverse marine life and shallow reefs for new divers in a 7mm wetsuit and underwater photographers. One of the three coastal towns in Palafrugell, Tamariu, is part of the Costa Brava region in the province of Girona, northeastern Catalonia, Spain. It is located 70 miles south of the border with France, a one hour and a half drive from Barcelona, and at the end of a windy road along a cliff. The town adopts its name after the many tamarisk trees surrounding the cove's promenade. Tamariu depicts the classic Costa Brava look of rugged cliffs covered in pine trees that abruptly cascade to meet the clear, deep blue Mediterranean waters filled with gorgonian coral reefs, seagrass beds, and diverse fauna.

In the past, Tamariu was initially a simple town of fishermen. However, since the Costa Brava's tourism boom in the '80s, it has become a town of tasty seafood restaurants and affordable, small hotels.

Unexpectedly, scuba diving in Tamariu started before all the tourist commotion, when the German Günter "Stolli" Stolberg arrived on the scene. As a scuba diver, he soon fell in love with the marine life and gorgonian coral seascapes of the Costa Brava.

In 1971, he founded the first and only dive center in the town to date: "Stolli's Dive base." Stolli was an avid underwater photographer and a pioneer of new lighting techniques. During his dives, he would

Paseo de Tamariu – Seafront of Tamariu where Stolli's Dive base and many famous restaurants are located. Nikon D90, AF DX Fisheye-Nikkor 10.5mm f/2.8G ED inside an Ikelite housing and dual DS51 strobes. Camera settings: ISO 200, f/16, 1/200s.

Spotting the scorpionfish – Diver spots with his torch a red scorpionfish (Scorpaena scrofa) at the entrance of its small cave during a deep dive. Nikon D90, AF DX Fisheye-Nikkor 10.5mm f/2.8G ED inside an Ikelite housing and dual DS51 strobes. Camera settings: ISO 200, f/16, 1/25s.

Views through the coral – Large gorgonian coral fan giving way to a school of black damselfish dancing under an afternoon sunburst. Nikon D90, AF DX Fisheye-Nikkor 10.5mm f/2.8G ED inside an Ikelite housing and dual DS51 strobes. Camera settings: ISO 200, f/16, 1/125s.

Pushed by the current – Long-snouted seahorse found in Tamariu hiding next to a patch of seagrass getting pushed by the current in the reef that morning. Nikon D90, AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED inside an Ikelite housing with dual DS51 strobe. Camera settings: ISO 100, f/20, 1/10s.

Smile at the camera –Dondice banyulensis nudibranch leaping out of a branch of seagrass towards the camera. Nikon D90, AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED inside an Ikelite housing with single DS51 strobe. Camera settings: ISO 200, f/18, 1/100s.

experiment with many backlighting and colored-filter photography on small critters. Undoubtedly, he excelled in wide-angle photography as well (check out his work here: https://stollis-divebase.eu/es/historia.html).

In just a few years, he built a scuba center from the ground up that still stands today. Since Stolli's passing in 2016, Maria and Tom Pichlmaier have taken over the dive center's management. They have kept offering its photo-friendly diving experience that Stolli created. Maria continues Stolli's legacy as an underwater photographer with her impressive capacity for spotting small critters, from camouflaging seahorses to colorful nudibranchs. If you are looking to take macro photography, do not forget to schedule a dive with her!

The dive base is located on a historic house on Tamariu's promenade, which leads to the entrance to the cove's shallow reef (5-13 meters). The dive base organizes dives all day in this reef, where many beginner divers jump in to work on their skills and certifications and where underwater photographers can encounter seahorses camouflaged to mimic seagrass.

This dive site is characterized by the exciting contrast of Posidonia seagrass beds against desert-like sand and rock stretches. The seagrass composes a unique backdrop for wide-angle images of the schools of baby barracudas, two-banded, and cow breams that frequently visit this site year-long. The sandy bottoms hide critters that are perfect for macro and fish portrait photography. An attentive diver in these underwater

Furio Cormorants – Three cormorants sit on the rocks of Furio reef waiting for their next meal. Nikon D90, AF DX Fisheye-Nikkor 10.5mm f/2.8G ED inside an Ikelite housing and dual DS51 strobes. Camera settings: ISO 200, f/13, 1/80s

Jelly glow – Barrell jellyfish that showed up near the shore of Tamariu with the afternoon sun behind its body. Nikon D90, AF DX Fisheye-Nikkor 10.5mm f/2.8G ED inside an Ikelite housing and dual DS51 strobes. Camera settings: ISO 200, f/16, 1/200s.

deserts can spot pipefish, stripped blennies, gobies (red-lipped and giant), wide-eyed flounders, lizardfish, striped mullets, combers, cardinalfish (with a mouthful of eggs), and the hard-to-find stargazers.

Divers can be lucky enough to enjoy an encounter with Mediterranean triggerfish, eagle rays, sea hares, and streaked gurnards that occasionally visit the reef for protection or food.

The cove's scenery transforms when the sun sets not only above water, where "habaneras" start playing in the restaurants during the summer, but also underwater when during a night dive, brown and red scorpionfish come out to feed. Taking advantage of the tall seagrass beds for protection, Mediterranean hermit crabs also go out for a stroll. The skittish serpent eels can be spotted undulating over the sand in the darkness, looking for prey. So, make sure to grab your torch or your focus light for some unique nighttime action!

The dive base also organizes boat trips to the outer reefs in the sailboat "la Gabriela." These outings on the Gabriela are a great way to explore the other dive sites Tamariu offers. The closest reef to the cove is the rock of Montiell, a dive site characterized by a big split in the middle of a large rock where many conger eels, moray eels, and lobsters like to hide during the day. The large stone is surrounded only by sand but has extensive seagrass beds growing on it, in which observant divers can find seahorses. The not-so-deep reef (8-24 meters) is perfect for beginner divers and underwater photographers that want to take advantage of a longer dive to nail that perfect shot.

Divers can also explore the Furio d'Aigua Xelida reef, where many nudibranchs like Mediterranean flabellinas, pilgrim hervias, dotted sea slugs, and many others hide under its choppy waters. Furio offers not only great opportunities for the classic nudibranch macro shots but also breathtaking wide-angle ones.

Gorgonian coral covers this reef's large vertical walls, which give way to sandy valleys and hidden caves. These corals typically spawn in June, giving photographers a unique opportunity for some magical macro shots. Still, these corals open up during many other months of the summer, allowing photographers to compose breathtaking images with anything from a sunburst to your dive buddy or the damselfish populating the dive site.

The more intrepid divers can jump into the Canyons of Tamariu, a famous dive site usually ranked in the top 10 dives in the Costa Brava. The three spectacular canyons of the dive site are a passage for many large subjects. The canyons are placed parallel to each other, giving rise to six walls full of gorgonian corals that harbor immense biodiversity.

Underwater photographers can face the challenge of capturing large schools of sardines moving rapidly and synchronously to avoid the attacks of hungry barracudas and mackerels. The wide-angle lens should also be ready to photograph the elegantly-swimming eagle ray, the slow-moving sunfish, or the curious bottle-nose dolphin. An undiscovered opportunity for the underwater photographer given by visiting all these outer reefs is the chance to take stunning split shots with the classic Costa Brava look. These shots depict the contrast of the rugged, pine-tree-covered cliffs of orange rock against the Mediterranean's deep blue waters with underwater subjects like the barrel jellyfish or the mauve stinger.

Peeking out – Longstriped blenny peeking out of its orange coral hideout for a portrait. Nikon D90, AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED inside an Ikelite housing with single DS51 strobe. Camera settings: ISO 200, f/18, 1/100s.

Swimming over a Gorgonian coral head – Wrasse fish swim over a gorgonian coral head as they flee from the group of divers that approaches. Nikon D90, AF DX Fisheye-Nikkor 10.5mm f/2.8G ED inside an Ikelite housing and dual DS51 strobes. Camera settings: ISO 200, f/16, 1/25s.

Star on a cliff – Smooth starfish hangs on to the wall of a cliff next to a lobster hideout. Nikon D90, AF DX Fisheye-Nikkor 10.5mm f/2.8G ED inside an Ikelite housing and single, snooted DS51 strobe. Camera settings: ISO 200, f/11, 1/100s.

Tamariu's privileged location in the Costa Brava allows divers to visit many of the best dive sites in the area during their trip to Catalonia, Spain. Divers will have easy access, either by boat or by car, to many other coves in the area like Begur, Sant Feliu de Guixols or Calella de Palafrugell, where there are many more dive sites to be explored. A notable one is the Ullastres, another reef usually ranked in the top 10 dives in the Costa Brava due to its exceptional marine life diversity.

In the cove, there are other ocean-related activities to enjoy other than diving. A few businesses rent boats, kayaks, and paddleboards for a

Fleeing school – School of sardines rapidly swims towards the camera after the attempt of a few hungry barracudas to eat some sardines as lunch. Nikon D90, AF DX Fisheye-Nikkor 10.5mm f/2.8G ED inside an Ikelite housing and dual DS51 strobes. Camera settings: ISO 200, f/10, 1/100s.

relaxing excursion along the coast's rocky cliffs and caves during the day. Regarding conservation events, every year in September, the town organizes a clean-up of the cove's waters, in which many volunteer divers participate to collect trash from the bottom of the reef. Moreover, eating at any of the delicious seafood restaurants on the promenade can follow any of the previously mentioned activities.

To summarize, in Tamariu, divers of all levels can enjoy dives that suit them perfectly. They can choose from a range of depths and difficulties: from deep, rocky terrains (up to 35 meters) to shallow reef dives (up to 13 meters). Underwater photographers can plan their dives according to their must-see subjects or the type of photography: from macro shots of nudibranchs or other small critters to wide-angle shots of gorgonian coral sceneries or large schools of fish. However, the activities are not limited to the water, as evidenced by the lovely restaurants and lively bars in the town. The mixture of entertainment inside and outside the water makes Tamariu the perfect location for all divers and underwater photographers.

Arnau Argemi
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My Shots

The crab with one claw

by Dr. Martin Sczyrba

During Summer 2019 my family and I spent few days at the Baltic Sea in Eastern Germay. The typical shore line there features an underwater world of sandy ground with plenty of rocks in depths of 3-5m. Larger deeper dives can only be done by boat.

As these rocks are surrounded by all sorts of small life it is still fun to snorkel or dive there straight from the beach.

The true masters of this world undoubtly are the crabs. They can be found around all of the rocks so I wanted to take some pictures of them.

The weather, though, was not in much favour with this idea. There was always strong wind causing waves and the respective current stirred up the sand leading to poor visibilty. Combined with sun this is the ideal weather for all other fun stuff in the water except for diving and underwater photography...

Literally on the last day the wind was reduced to a level where there was still quite a current in the water but visibility at least allowed some photography. So I went out to look for the crabs.

But apparently the crabs also did not like the current as they were all hiding at the base of the rocks or in the sea weed between them. For this I could not really get in a perspective to the crabs showing them different then just top-down.

I dove from rock to rock and it was always the same. Suddenly, I saw one crab on top of a rock boldly facing the current.

Canon Powershot S120 in Ikelite Housing with FantaSea BigEye Lens M67 Mk2, f/8, 1/30, ISO160, Inon-D2000 strobe at -3 (manual)

Although the crab only got one claw left it seems to compensate this loss by bravery. Here was the image I was after! So I took a few shots showing this brave crab in the seaweed bent by the drift.

When I turned away the camera to move on, I saw the crab climbing down from the rock and coming towards me. So I laid the camera on the sand and watched what was to happen. I guess the crab saw its image in the front lens of my camera and boldly posed in front of the imaginary opponent, raising the remaining claw to defend its rock. Is there someone else out there who also gets reminded on the Black Knight at the bridge in Monty Python's Holy Grail...? I, at least, had to laugh quite a bit in that situation. And the crab wouldn't go away! Turning the camera a bit to the left or right made the crab to follow the lens. Only when I eventually moved away the camera from the rock the crab returned and continued watching over it from the top in the sea weed again.

What a great dive and nice images at last. Thank you, one-claw crab!

Dr. Martin Sczyrba
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Guidelines for contributors

The response to UwP has been nothing short of fantastic. We are looking for interesting, well illustrated articles about underwater photography. We are looking for work from existing names but would also like to discover some of the new talent out there and that could be you! UwP is the perfect publication for you to increase your profile in the underwater photography community.

The type of articles we're looking for fall into five main categories:

Uw photo techniques - Balanced light, composition, etc
Locations - Photo friendly dive sites, countries or liveaboards,
Subjects -, Anything from whale sharks to nudibranchs in full detail
Equipment reviews - Detailed appraisals of the latest equipment
Personalities - Interviews/features about leading underwater photographers

If you have an idea for an article,
contact me first before putting pen to paper.
E mail peter@uwpmag.com

How to submit articles

To keep UwP simple and financially viable, we can only accept submissions by e mail and they need to be done in the following way:

1. The text should be saved as a TEXT file and attached to the e mail
2. Images must be attached to the e mail and they need to be 150dpi

Size - Maximum length 20cm i.e. horizontal pictures would be 20 cm wide and verticals would be 20cm high.

File type - Save your image as a JPG file and set the compression to "Medium" quality. This should result in images no larger than about 120k which can be transmitted quickly. If we want larger sizes we will contact you.

3. Captions - **Each and every image MUST have full photographic details** including camera, housing, lens, lighting, film, aperture, shutter speed and exposure mode. These must also be copied and pasted into the body of the e mail.

Parting Shot

No Parting Shots were submitted for this issue :-(

Do you have a shot
which has a story within a story?
If so e mail it with up to 500 words of text
and yours could be the next Parting Shot.

peter@uwpmag.com

Parting Clip

Welcome to a new feature in UwP aimed at showcasing short video clips from readers.
Like Parting Shot there should be a story within a story with up to 500 words.
You will need to be online to view the clip in your browser as embedding the footage into the UwP pdf file would make it too large a file for most to download.

Blackmagic 4K with Leica f2.8-f4 8-18mm zoom lens behind a Zen DP-170 dome, Nauticam NA-BMPCCII housing, two Sola Video Pro lights, shooting raw at 60fps slowed down to 30fps in camera.

Marine mammal interactions are always special and this particular one was no exception; not only in the interaction itself but also the timing of it.

My dive buddy, Joe Tezak, had just recovered from a life threatening illness. It had been many months since he was last in the sea and we were hoping for a nice calm clear day just to get his gills wet again. You know nothing brilliant, just hover around in the underwater forest; maybe look at some fish…

We had just descended when out of the giant kelp curtain came a good sized harbor seal. It appeared to be a young male and was not in the least bit afraid of us. He swam right by me (even though I had the dome port) and proceeded to say an intimate hello to Joe. In fact, downright familiar!

Of course his intentions were probably more in line with a young amorous male pinniped in spring but we chose to see it as a big welcome back Joe greeting. "It's good to see you again. Where have you been!?"

Joseph C. Dovala
https://vimeo.com/jcdovala

Do you have a short video clip which has a story within a story? If so e mail it with up to 500 words of text and yours could be the next Parting Clip.
peter@uwpmag.com

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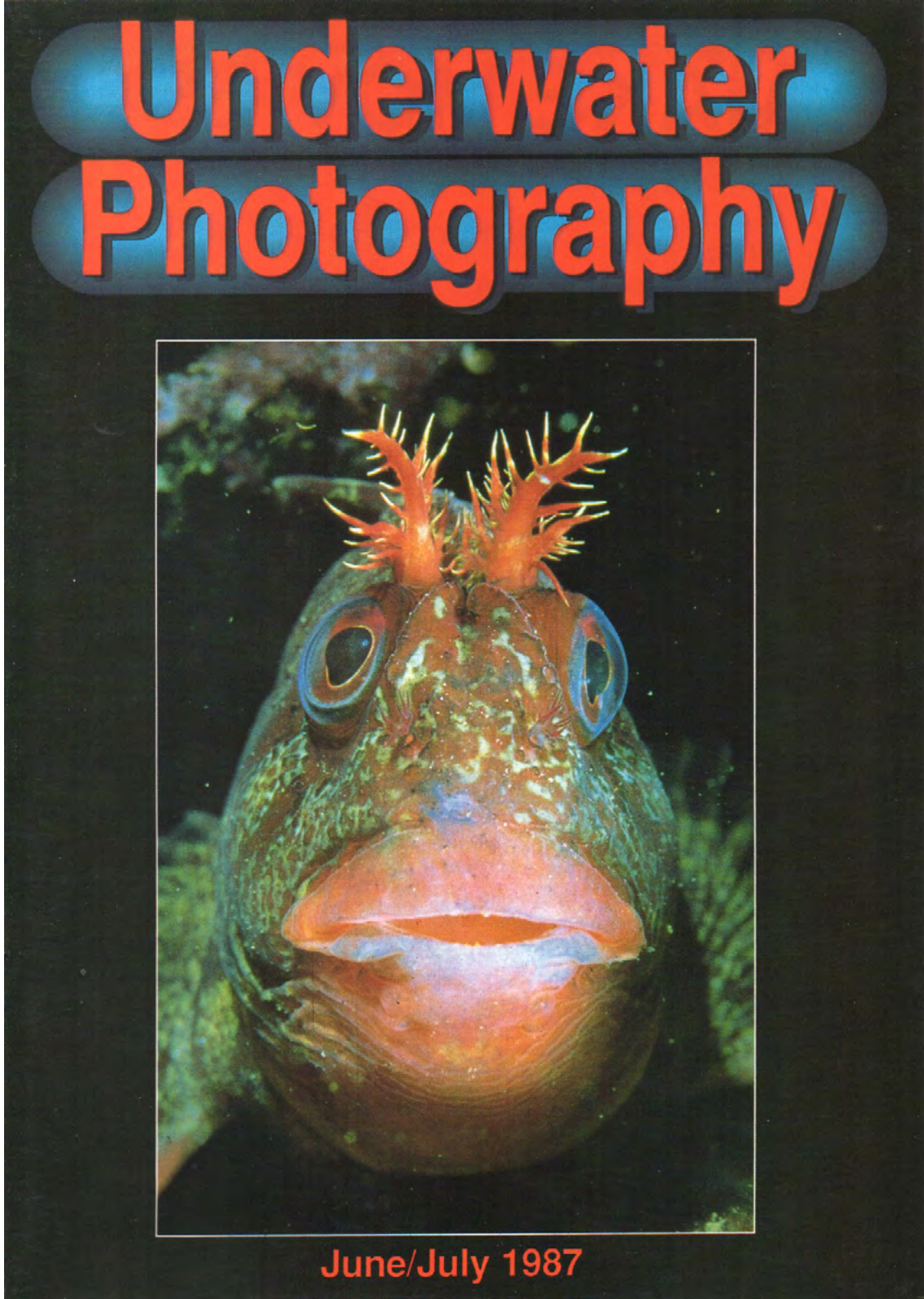

Underwater Photography Magazine

Issue No 4.
June/July 1987

Contents

Editorial

At underwater photographic competitions, it is always interesting to listen to comments made by the viewing public as they look at the winning prints. As well as the usual, "I've got a better one than that", one of the most commonly overheard comments is "I wish I could take shots like that". Its an understandable sentiment but it does raise an interesting and central point.
The simple answer is that anyone can take shots like that. All they have to do is do it. Effort in equals results out but if that effort is slightly misguided, then the results must fall short. For most people with underwater cameras who dive in a club environment, they find that their dives are taken up with training or with following groups interested in covering as large an area as possible. To try and take good underwater photographs in such situations is so difficult that it would be better not to even try at all.
The instant improvement comes from letting underwater photography become the sole reason for the dive. This gives you time to concentrate on the subjects and on your techniques.
Diving with other underwater photographers is one of the best ways of improving your shots yet, strangely enough, there are no underwater photographic clubs as such. This lack of clubs must reflect the attitude of underwater photographers as a group of individuals who organise their own activities amongst themselves.
It seems as if this situation will not change but the solution to the problem lies in the answer to "I wish I could take shots like that". The sooner you start to dive for underwater photography and with underwater photographers, the sooner you will overhear the same remark being made when they are looking at *your* prints on display in the winning enclosure.

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Subscriptions are available by mail order. Annual costs are £15 UK, £18 Europe and £20 Overseas.

SLAVE FLASHGUNS

I haven't noticed a reader's page so far in UP and was wondering if you thought it would be a good idea. What I really mean is that **I** think it would. Or at least a question and answer feature with queries/problems from readers and answers/solutions from the UP editorial team.
There could be all sorts of topics: technical, optical, equipment, film, etc. If you got stuck and there wasn't much direct response one month, you could always make some up.
I'd like to start the ball rolling with a question about how you would go about making a home made slave strobe. What sort of housing is possible/advisable, are the integral slave sensors sensitive enough or are the add-on ones better? It seems like an easy proposition but I'm sure there must be some problems.
Keep "UP" the good work. It keeps us divers in the "provinces" in contact.

Keith Grant
Dundee

An excellent idea Keith and one which we would like to encourage. There are several topics/techniques which don't really warrant the full article treatment but which do provide useful information for us all.
Slave flashes are a good and simple way of adding extra light into shots from a different angle to the main light source. In addition, you can give your model a slave flash to hold and this will then look like a torch when the shot is taken. This adds a good point of interest.
Quite a few underwater flashguns have a slave sensor built in but, if this is your only flashgun, it isn't much use in the slave mode and you have to have another flash to trigger it! There are very few slave only underwater flashguns on the market and many people house their own. The housing can be made from tubular perspex with flat ends or box shaped with glued joints. Tensol 7 is the recommended glue for perspex for underwater use and I also use silicone rubber compound which is both an adhesive and a slightly flexible sealant. The design of your housing depends very much on the facilities which you have available. Lathes and mills allow greater accuracy but its surprising what you can do with a basic tool kit of hand files and time. With regard to the sensor unit, I have found that both a seperate sensor on an existing flash and the dedicated slave flashguns are reasonably reliable up to about 6 feet. Over that, they tend to become erratic. The seperate sensors are polarity and voltage concious. They seem to work best with the higher trigger voltage flashguns.

SEA & SEA RESPOND

I have read your editorial comments, and unfortunately, I have to agree, that if Sea and Sea is lumped in with the smaller companies, then we can improve our instruction manuals a great deal which I think should be our first priority, and then possibly to improve the packaging, although I do not have any control whatsoever on this matter, except to pass on your comments to Sea & Sea in Japan. May I suggest that you send a copy of your magazine to Sea & Sea in Japan to show them what you are doing to help improve the UK, and to a certain extent, the European underwater photographic scene. I am sure that Masaoki Yamaguchi will appreciate your comments in the editorial column, and, as past evidence shows us, they do learn quickly from information and comments given to them. Please keep up the good work.

David Chandler, Sea & Sea UK Ltd.

Copies are on their way, David, and let's hope that we can give them the feedback to help them keep on producing ideal equipment for this specialised market.

IRISH ACCUSATIONS

Please find enclosed a cheque for £3 to cover the balance on my subscription to UP. I object most strongly, however, to being asked for this amount. Postage from the UK to Eire is exactly the same as to inland UK destinations, and I fail to see what other additional costs you could have to cover. Perhaps you would care to justify this discrimination against Irish photographers in a future issue of UP.

A.Manison
Dublin

Strong stuff, Mr Manison, but if only you had taken the trouble to ask the Post Office about the rates for sending post to Eire, you would have found that your country is classed as part of Europe as from 20th October 1986.
This therefore results in the increased postal costs which are reflected in the subscription rates for Eire.

COMPETITION ENTRY FEES

Can I enquire as to the breakdown of the charge of £1.50 per slide for your Agfa competition?
Could the low number of entries in the previous competition be more because of the high charge to prize ratio? In the April/May issue, the "Exciting Lighting" competition, charging £1.50 per slide for a prize of 10 rolls of film was over the page from another competiton offering a holiday for two as first prize and with no entry charge.
I understand that these two competitions are completely different in nature and I suspect that to win the Agfa Competition, the actual win and printing of the picture are more important than the rolls of film. I wonder how many people are put off by the entry charge?

E. Childs, Aberdeen

*Fair comment, Mr Childs, and noted, but finances are tight and with the cost of printing each colour shot at £30 **minimum**, UP hasn't got the budget to get too extravagant. The fee is aimed at covering printing costs mainly but also handling, insurance and return postage of the entries. If a slide should go missing for any reason whatsoever, UP would be responsible so we have to insure your material. In addition, the fee covers the time taken to pass constructive criticism, when requested by the entrants, and, as you have requested such a service, we are replying to you about your entry under seperate cover.*

JULANDA DISAPPEARS

Several readers have contacted us to let us know that the Julanda at Ras Mohammed in the Red Sea has finally slipped off the reef and gone down to very deep water.
It happened during a particularly stong storm which tipped the balance for the already hovering wreck. The forces involved must have been quite impressive as would have been the opportunity to have been underwater at the time to watch her go over the edge. Now that would have been something to catch on video....
The good news is that all of the shots you've taken of the wreck are now unrepeatable and there are the optimists who now hope that this will enhance their rarity value!

Nimar SLR Housings

For many years, if you wanted a housing for your land camera, the choice of material was either aluminium or injection moulded polycarbonate. If you decided that the lighter polycarbonate housing was for you, then your had very little choice but to buy from Ikelite. This USA based firm have been making housings since the late 1960's and have virtually cornered the market in injection moulded housings. Their range covers most popular cameras from disc, compact, 35mm SLR to medium format and even cine and video cameras.
Their monopoly of this market has recently been opposed with the arrival of Plastmeccanica, an Italian firm specialising in injection moulding plastics, as they now produce housings for compact and 35mm SLR cameras as well as the video housings reviewed by Peter Rowlands in the last issue of UP.
Marketed under the name Nimar, their SLR housing is available in two versions which look almost identical at first glance but they are different and between them they can house virtually any SLR camera from all of the major manufacturers as well as some not covered by the Ikelite housings. One version is for cameras without winders and the other is for those with. The design of winder can stop some cameras being used so it is best to check with the suppliers before ordering.
The construction of the units is very strong with a simple design based around a 1/2" wall thickness. This is a welcome overspecification and allows you to use the housings down to 120 metres so you shouldn't feel too limited when snorkelling...At last designers are beginning to realise that the underwater photography world needs very robust equipment (which costs a very small extra percentage to produce). This wall thickness should ensure no flexing at depth which has been known to cause control linkages to foul and shutter release levers not to work on Ikelite housings. Its all very well to be waterproof to 100 metres but you still want to be able to operate the camera.
To load your camera for the first time, you need to attach gears onto the focusing and aperture controls of the lens The focusing gear is large toothed and broad to accommodate almost any lens and two are supplied with different internal diameters to make sure all sizes are catered for.
The aperture ring is much thinner and looks prone to breaking but experience has shown that these injection moulded attachments are very strong and can be stretched to go over the lens and then tightened with a small screw. The aperture ring has a small cut out into which a linking control from the rear of the housing locates and allows aperture alterations to be made.
The teeth on the focusing gear link into a large idling gear attached to the housing which transfers via bevel gears to the focusing control knob on the left side of the housing when viewed from behind.
The ratio of the gearing is fine but, as with all housings, the long focusing travel on macro lenses results in several turns of the control knob being needed to go from infinity to minimum focus.
With the focus and aperture controls fitted to the camera, it is then fitted to the baseplate with a large knurled knob into the tripod socket. As the baseplate is attached to the rear of the housing, you have to remove the camera and unhook the aperture lever to change films. This is a pain to have to do and is a common problem with all polycarbonate housings and is just another design aspect we have to live with.
The shutter release lever linkage is fully adjustable to accomodate various positions and can even allow Praktica cameras to be housed despite the shutter release being in an awkward position.
Once all of these controls are lined up the

Above: *The Nimar SLR housings come supplied with flat port and shade together with focus and aperture controls for two lenses.*
Below: *Internally the controls are oversize and well spaced. The shutter release lever can be adjusted to suit any camera.*

rear of the housing with the camera attached is slid into the front to link up with the focusing gearing. Once in position, the housing is sealed by 6 strong plastic catches which exert an even pressure over the whole of the compression O ring. The strong pressure needed to snap these catches into place ensures that they will not come undone underwater and, even if one was forced off accidentally, it wouldn't affect the seal.

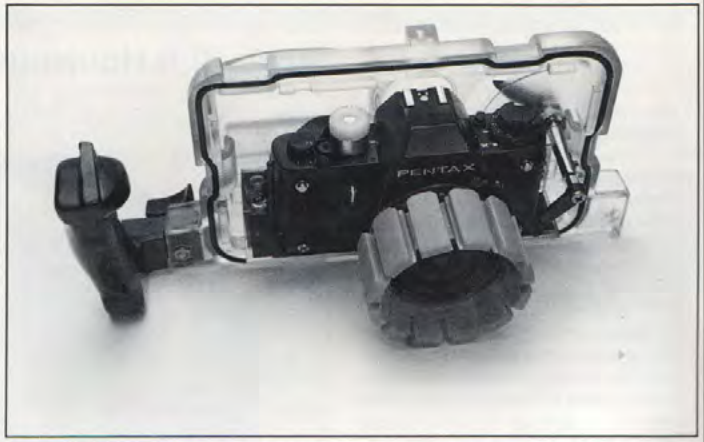
Most of the controls fall easily to hand with the exception of the aperture which is at the rear of the housing and is a bit awkward but, this is not a control which needs the constant alteration of a focus control so is not too much of a problem.

The viewing port area is as close to the eyepiece as possible to give the best viewing and, not available for this test, there is an additional 'super-eye' viewfinder to give full frame reduced size viewing.

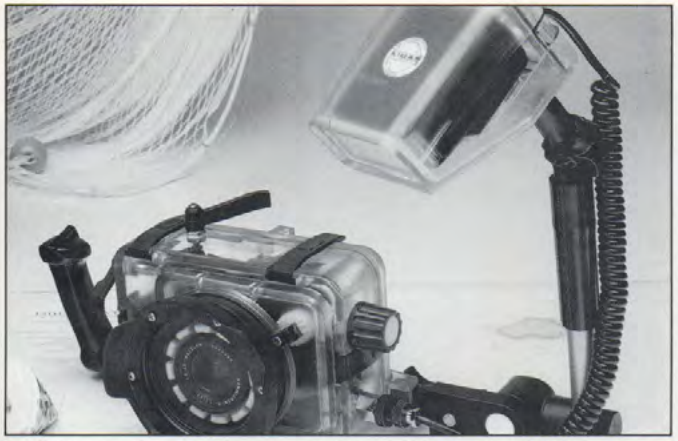
Cameras with removable prisms can be used with their waist level viewfinders fitted. This gives full frame viewing by looking down into the camera.

To fire external flashguns, a Nikonos 111/1VA/V socket is supplied as standard so if you already own a Nikonos and flashgun and want a housing to use macro lenses, your existing flash will connect. A handle is provided for the right hand side and on the other there is a mounting for a flash arm. Nimar produce a neat and multi-position arm together with a housing for a Metz 30B3 flashgun which is a versatile and not too expensive outfit.

On land the housing weighs just under 3kg and underwater, with a camera installed it will be positively buoyant so if you let go, look to the surface rather than the seabed. The exact buoyancy will depend on the camera, lens and winder fitted.



Above: *Focus gear and aperture linkage must be fitted to the camera before installing it into the housing. Once fitted, they needn't be removed but the camera must be removed from the baseplate to change film. The baseplate is slotted so can be positioned to suit the camera being housed.*



Above: *Designed for their housings or the Nikonos, Nimar produce a flash housing with arm and bracket for the Metz 30 flash.Other similarly shaped flashguns can be accommodated. The arm and bracket provide multi-positioning which is rigid when tightened.*

Supplied with a flat port as standard, the Nimar SLR housings have 3 other ports available. The dome port will correct lenses from 20mm to 50mm(this does depend on their physical size), the macro port is for 50/55mm macro lenses and the telephoto is for longer telephotos and 100/105mm macro lenses. These ports are held in position with Philips head screws which are awkward to undo as the lens hood on the port gets in the way but fortunately, changing ports is not an activity which is needed all the time and this method of fixing is extremely secure, if somewhat fiddly.

It is when looking at the price list for these accessories that you begin to appreciate just how much less expensive the housing and extras are. The dome port, for instance, is just £36.10 in the UK and the other ports are just as good value. The lower cost of these accessories is important to the system as a whole as, in most cases, the basic housing is made much more versatile with the addition of accessory ports etc. The cost advantage is just as evident for the complete housing, for at £225, the Nimar is well over 30% cheaper than any competition and yet the quality and the solidity of the construction is high.

According to Nimar, their housings will fit over 130 SLR cameras so if you already have a camera, there's a good chance there's a housing to suit.

It's good to think that we now have a choice and that the new contender has a lot of physical advantages together with a pleasant financial one.

Competition has always been the best way of keeping manufacturers on their toes so it's good to see these new products.

Jim Ward

Competing with composition

Dr Mia Buehr reveals the secrets

Above: *A static subject can be given motion and interest by introducing a strong diagonal to the picture. Here the diver's presence is enhanced by the strong diagonal lines of the marine plants. The combination is both informative and pleasing. Nikonos V with 15mm lens, fill in flash with Aqua F1 with diffuser. 1/90th @ F 5.6. Ektachrome 64 film*

With a broad smile on his face, the winner of the photographic competition came down the aisle to collect his trophy, while his winning shot was projected on the screen. The competition had been a good one, with entries from some of the best photographers in the country, but everyone had to agree that this picture deserved to win. The minute it came up on the screen it held everyone's attention. The fish seemed to float, perfectly balanced in the frame and yet it gave the impression of vivid life and movement. Later, in the bar, two photographers were discussing the winning entry. "OK, so it was a picture of a fish. I've got lots of fish shots but I can never get them to look like that. What have you got to do to get that sort of shot?" The other one considered. "I suppose you've just got to have an eye for a picture. Composition and all that.".

Everybody realises that composition is something that's important in photography. But just what is good composition, and how do you use it to make good pictures? Once you've mastered the technical basics of focus and exposure, how do you recognise a good picture when it appears in your viewfinder? Many underwater photographers do find it difficult to come to terms with the principles of composition. For a start, good composition doesn't follow firm rules. Many sorts of pictures can be pleasing to the eye, and you can never define good composition in terms of some simple mathematical formula. But there are a few basic guidelines to keep in mind if you want to take pictures that look good.

First, think about the space into which your picture must fit: in other words, your frame. If you were a painter you could choose the shape of your canvas. It could be square, oblong, or even round, to suit the shape of your subject. But if you're a photographer with a 35mm camera you are stuck with the rectangular shape of the 35mm frame. Whatever your subject is, whether a round anemone or an oval flatfish or a gangling diver all arms and jet fins, it must fit comfortably into that rectangle. And it has got to look well balanced there, not huddled into one corner or slipping out of one side.

So having accepted the shape of your frame, how do you go about arranging your subject in it? A good way of starting to improve your shots is to stop thinking of them as coral, basking sharks or divers and start to think of them as the simple shapes and lines that they make in your viewfinder. A fanworm looked at from the top is a circle, but from the side it may be more of a triangle. A crab can be an oval from the top, a rectangle from the front, and maybe a triangle from the side. And a diver against a cliff can be just a collection of diagonal lines. With practice, the dominant lines and shapes of pictures become easy to pick out and, once you can see your subjects in terms of the patterns they make, you are halfway along the road to mastering the principles of good composition.

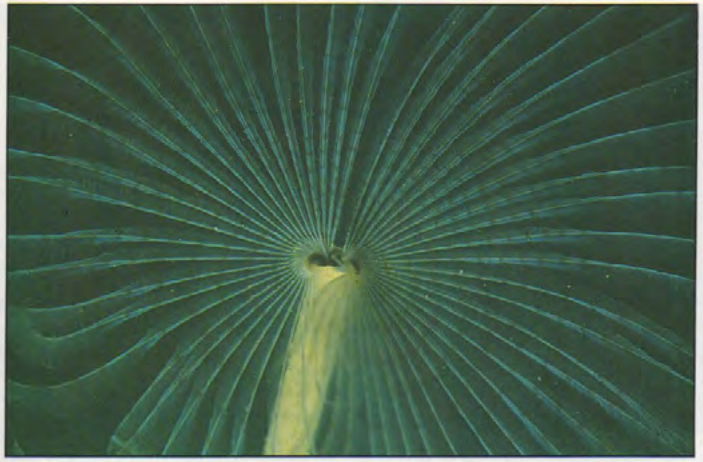
Each one of the simple lines and shapes has its own characteristic effect on a picture and you can use each one to create the effect you want. For instance, a circle (an anemone from the top) is a restful shape to look at because the eye can travel easily around it. But the trouble with circles is that they are so restful that they can become boring, and also a circle fits very uncomfortably into a rectangular frame. One way to cope with a circular subject is to get down on your stomach and shoot it from a lower viewpoint so that it becomes an oval. Ovals have got a lot going for them: They are satisfying to look at and they fit beautifully into a rectangular frame. Curving lines are generally pleasing to the eye. Such subjects as anemone tentacles, feather star arms, or even the curving edge of a kelp frond can make a considerable contribution to a picture. Or, for guaranteed visual impact, you could try taking pictures of diagonal lines. Diagonal lines never fail to give verve and movement to a subject. Have you got a stolid subject which refuses to do anything exciting? Tilt the camera a touch so that the main lines of the subject run diagonally in the frame and see how the picture immediately perks up.

On the other hand, if you want to give a subject stability within the frame, change your viewpoint so that its lines run horizontally or vertically. Lines that parallel the sides of the frame really nail down the subject within the frame, so square or rectangular subjects have great stability. But the all-time never-fail foolproof shape for the photographer has got to be the triangle. Take a diagonal for excitement, add a horizontal or vertical line for stability, and you have the basic triangle. And as long as you position the triangle sensibly in the rectangular frame you can't go too far wrong.

But your photograph consists of more than just your subject. Too many people forget that the background, or foreground, for the rock that the crab sits on is also a part of the picture. Ignore backgrounds at your peril: bad backgrounds have ruined more underwater photographs than just about any other element of composition.

Perhaps the simplest way to cope with background is to eliminate it entirely by shooting against open water. Your subject then appears against plain blue or black with no competition from a busy background. Or you can get so close to your subject that it entirely fills the frame, thus neatly sidestepping the whole problem. But with care the background of a shot can be turned into an ally and used to add impact. Frame a little crab so that the kelp it sits on makes a strong diagonal and see how the picture takes on extra movement. Use a crevice or dark hole to frame a fish and the result is instant drama. Once you stop ignoring backgrounds and start looking at them, you have an extra element to use when putting together your pictures. Position a brilliant feather star in front of a grey-green rock for a startling colour contrast, or use the soft texture of a muddy bottom to emphasise the delicate patterns of brittle star arms.

Good composition is the art of putting together the various parts of a picture - shapes, lines, colours, textures to make a photograph that is both intriguing to the eye and pleasing to look at. Most people know intuitively whether a picture is good or bad, but are usually at



Left:
Circles can be difficult shapes to handle imaginatively. By coming in close, the subject fills the frame and the problem is avoided.
If you have a subject with delicate details, shoot against open water to allow them to come out in the picture. In this way you eliminate the background and concentrate the eye on the subject.
Nikon F2 in an Ikelite housing with a 135mm lens and extension tube for macro work with an increased stand-off distance. The lack of probes/frames doesn't disturb this normally touchy subject.

Left:
Both the line of the crab and the edge of the kelp describe gentle curves which run in opposite diagonal directions and make this simple portrait work well.
These curves are easy on the eye yet the photograph still conveys detail about the subject and its typical environment. It is this combination which makes a photograph both useful and attractive.
Nikon F2 in an Ikelite housing with a Marlin flash. 55mm macro lens. 1/60th @ F16 with Ektachrome 64 film. Camera to subject distance approximately 18".

Above:
A subject can change its shape according to the point of view of the photographer. This view of the crab produces an oval which fits very neatly into the rectangular frame, especially when tilted a little bit on the diagonal.
Crabs are particularly useful subjects for practicing techniques as they stay still and aren't too put off by probes and frames!
Nikon F2, 55mm macro lens with Marlin flash. 1/60th @ F16 with Ektachrome 64 film. Camera to subject distance approximately 18"

Competing with composition...

a loss if called upon to say just why. If you think you can recognize a good picture when you see it, start asking yourself why some pictures look good while others don't. Is it because of the way the subject is positioned in the frame? If there is a sense of movement or excitement in the picture, what makes it move, or gives the feeling of action? Do the colours contribute anything, or the textures, or the way the field is lit?

A feeling for composition can be learned but, like anything else worthwhile, it has to be worked at. Look at good pictures, whether your own or other people's, whether underwater or on land, whether photographs or paintings.

Composition is a subject you can practice without getting in the water. Look at the images in magazines and see how they use composition to enhance their subject and increase the appeal. Once you can recognize good pictures when you see them, you are within grasping distance of producing them yourself.

Text and photography by Dr Mia Buehr

Next issue, Mia continues with more hints to help you compete with composition.

The Aquavision Capsule 8 Video housing and reveals a tale of woe

Following my editorial in the last issue of UP, I didn't expect to have to carry out my intentions so soon. To remind you of the contents, I promised that UP's equipment reviews would be truthful, unbiased and up to date.

I regret to have to write this review for it could have been avoided, had the manufacturer not decided to perform an ostrich attitude and had tried to solve the serious problems we are encountering with all three of the housings which we, as Ocean Optics Ltd, imported for sale in the UK.

The following is therefore truthful, unbiased and up to date at the time of writing.

A customer was getting out of focus results

Having paid for the housings and been told that they were ex stock, we waited over two months for them to be sent and, in the meantime, had sold one unit to a Ministry Department. This was sent as soon as we received them and a few days later, the customer rang us to say that all of the results being produced underwater were out of focus. We were concerned to solve the problem and, using our test tank and collimating machinery, tested the other two units in our posession.

Our tests confirmed that they were producing seriously out of focus results. Adding a bright light helped sharpen the image slightly due to the increased depth of field so the point of accurate focus was incorrect. They were both producing sharp shots on land.

Incorrect rear element?

The Capsule 8 houses the Sony 8mm Handycam and has a wide angle adaptor incorporated in the housing with a front dome port.Quick optical calculations helped by trial and error indicated that the rear correction lens on the supplementary wide angle adaptor did not seem powerful enough. Increasing the power by one and a half dioptres positive produced sharp results. Another solution was to move the camera further back from the supplementary wide angle adaptor to achieve the same result.

We phoned Aquavision in Canada and spoke to Val Ranetkins, the owner. He was helpful but expressed surprise as he insisted that he had sold over 300 similar units and hadn't had any problems. He could only conclude that we were doing something wrong as why would he not have had any complaints from other customers?

Aquavision suggest the problem is with the Sony Handycam

We agreed to repeat the tests and report back. We then telexed that our latest tests still confirmed the situation and we awaited his reply/solution.

No reply was forthcoming for a while despite several reminders and eventually Aquavision phoned to say that the problem is with the Sony Handycam camera! He advised us to remove a panel from the camera and adjust the focus to suit his housing's optics.

Aquavision don't test their housing's optics underwater

Not accepting this as a sensible or responsible solution and wanting to try to trace the cause of the apparent problem, we enquired as to Aquavision's testing/quality control and were staggered to learn that they do not test their production housings underwater for optical accuracy. On land, the dome has no power and will not affect the focusing. It is only when the front surface of the dome is in contact with water that it alters the focus.

Another European importer has had similar problems

Having exhausted our patience and knowledge, we contacted Subatec in Switzerland who had imported some units and found that they too had experienced the same cash-with-order-long delay-in-delivery service from Aquavision. In addition, they had had similar problems with the optics which they found were due to the lens of the Handycam not being in the centre of the dome. The Aquavision designer hadn't noticed that the lens on the Handycam is about 4mm off centre. This may not sound like much but, in optical terms, it can mean the difference between sharp and blurred.

Subatec had carried out modifications to all of their housings and advised Aquavision of the problem.

We were surprised but a little reassured to learn that Subatec had experienced similar problems as, from Aquavision's insistence that we were the only one's having such a problem, we were convinced that we must be doing something wrong. It transpired that Subatec had experienced the same denials and lack of communication when their problems were pointed out in both unreplied-to letters and telexes.

And yet Aquavision assured us that we were the only ones in the world having this problem.

We phoned a major supplier of underwater photographic equipment in the USA who said they definitely hadn't experienced such problems but that the service and dealings with Aquavision had been "downright unco-operative"

So to summarise, we have been truthful in presenting the facts, we have been unbiased because we do actually think that the housing is good (if only it would focus) and, as to the up to date position, Aquavision have proposed that we return the housings to them for testing. If they find that the housings are wrong, then they will refund our money including our shipping costs. If they test them and find that they are OK, they will still refund the price paid but less shipping costs.

We pointed out that, as a magazine publisher, we were prepared to hold our review until the problem had been solved rather than produce a negative report cataloguing the problems encountered with the units supplied. After all, if this is an isolated problem, such a report would be unrepresentative but we do think it strange that we have the only three housings with this problem.

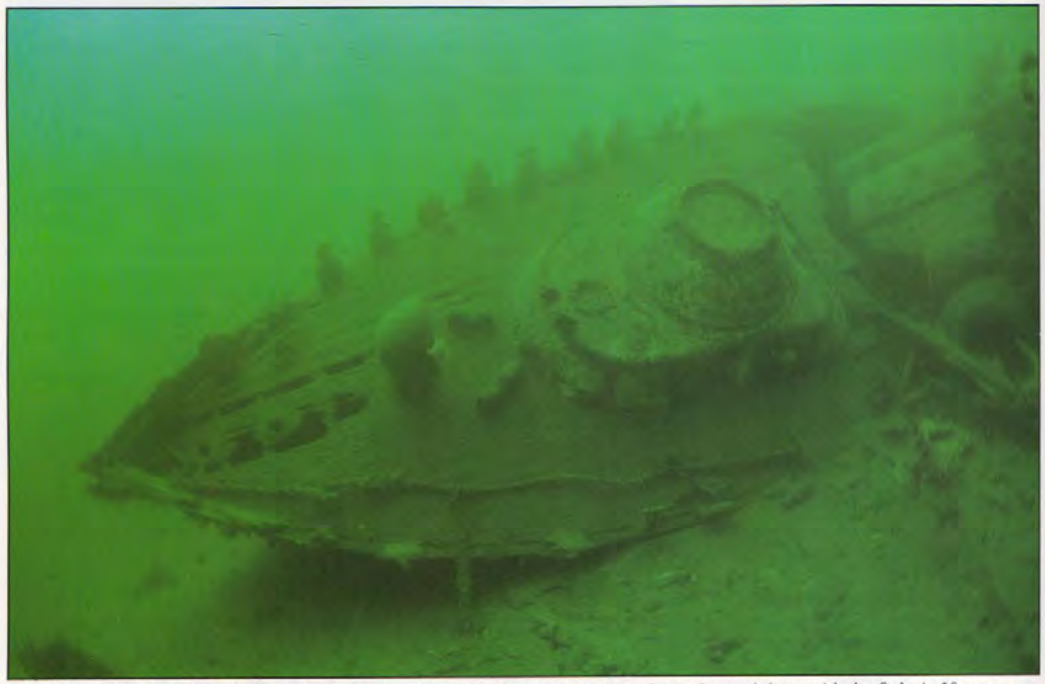
Aquavision telexed us to say that their refund would only be sent once they had the housings back and that "We'll let you decide what to do concerning your article in Underwater Photography".

You've just read our decision and we'll keep you informed.

Until the problem is resolved, our advice is not to consider this housing as the three units we tested appear to have an optical problem in the design.

Peter Rowlands

H.M.S. Royal Oak, Scapa Flow



Above: *No this isn't it! This is the Admiral's Barge which was tied up alongside and was dragged down with the Oak. At 30 metres the water was clear but dark, the camera had to be held firmly on a solid piece of wreckage to make sure it didn't move during the exposure. Nikonos V with 16mm 180° lens. Auto shutter gave 2 seconds @ F4. Agfa 50 RS film processed on site.*

On the night of Friday 13th 1939, a German U Boat penetrated the British Naval defences of Scapa Flow in the Orkney Islands and sank HMS Royal Oak. This 600 foot battleship sank into 30 metres of cold, dark water as over 800 of her crew perished. She was declared a war grave and to this day has lain undisturbed, her location marked with the traditional green wreck buoy in the north-east corner of the Flow.

Since there are no other such British Naval wrecks in diveable waters anywhere in the world, the Royal Oak must rank as one of the ultimate wreck dives. The War Grave status prohibits any diving within a hundred yards of her and this is policed by both the Navy and the local Coastguard as well as the local inhabitants of Orkney who feel a strong responsibility towards her.

Following some unauthorised diving in the 1970's and an unproductive over-the-top BSAC filming expedition in 1979, the diving ban has been enforced with even more vigour and it was with little hope that UP wrote to the Ministry of Defence for permission to take stills of the wreck for a soon to be published book on shipwrecks.

Our request was, however, granted on the condition that we only dive when the Scotland and Northern Ireland Clearance Diving Team was in Orkney. This team is responsible for Naval ordnance around the Scottish coast. Their work is extremely varied, carried out with little notice and, as with most Government Departments, has to operate on a shrinking budget. Part of their responsibility is the Royal Oak and they dive her at least once a year to raise a battle ensign on the wreck.

That we ever got permission and then came to have such a successful trip is due entirely to Lieutenant Mike Croome-Carol and his team who provided full back up in weather conditions which proved to be far from favourable.

Having dived the Royal Oak during the BSAC expedition, we knew of her physical location and characteristics.

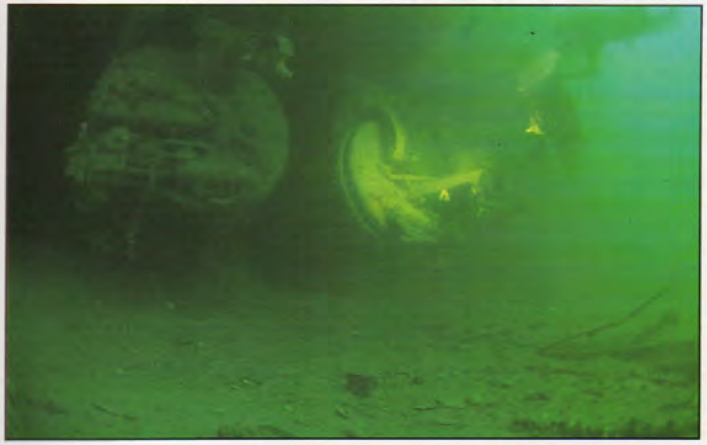
Photographically, she, like all large objects in cold dark water, was a difficult task. The natural tendency in the gloom is to add light using electronic flash. This adds both colour and detail but does tend to destroy the atmosphere. In addition, the large scale of the subject forces you to take a further step back to get as much as possible into the frame. By moving further back you increase the flash to subject distance and so reduce its power. The solution if flash is used is to concentrate on detailed areas of the wreck and use a different technique for the larger areas.

Since most books on underwater photography and most diving magazines tend to publish glossy, fill-in flash shots with juicy colour in the foreground against rich blue backgrounds, the initial suggestion of shooting the Oak by available light might not seem the most sensible but it is, strangely enough, the most effective. The principle being that if you use long exposures and keep the camera steady, you will be amplifying the available light and so will produce shots which are in fact better than the real thing. A similar situation on land would be taking shots by moonlight.

Diving within the rules laid down by the Navy, we could not run into decompression and this meant just two twenty minute dives a day if we were at the maximum depth of 30 metres. That only gave us 40 minutes a day each which, when you are trying to cover a 600 foot battleship, is very limiting. Such restrictions do have a benefit in that they concentrate the mind.

Above: *This shot was taken after the BSAC expedition in 1979 and made me realise that the solution to capturing such a large subject in such dark conditions is not to add light but just to amplify what's there. With a long exposure, the film is being given more light than my eye so what you get on film is more than you can see at the time you take the shot! Mamiya RB67 with 37mm 180° lens. 2 secs @ F5.6*

Below: *The massive breeches of the 15" guns are almost under the ship and are very dark. The addition of a diver with an 80 watt movie light adds both colour and some detail together with a point of interest. The long exposure has resulted in a blurred diver. Nikonos V, 16mm 180° lens, 5 secs @ F4. Agfa 50RS film.*



The six hour surface interval in between dives proved essential for getting warm again for the waters of Scapa Flow in March are a severe test for even the driest dry suit. Until we acclimatised after a few days, our hands became numb after 15 to 20 minutes and could not operate the controls of our cameras. My diving buddy of many years was Steve Birchall and together we had produced an audio visual taken behind the BSAC expedition in 1979. It turned out that it was this AV which convinced Mike Croome-Carol that we were serious underwater photographers and not just more run-of-the-mill divers trying to dive on the Oak.

The principle behind available light photography is extremely simple and in conditions like these is quite easy and certainly effective. There are no flash exposures to worry about and, for the whole week, my shutter speed dial never left A for automatic. The light levels may have been low but they were very even. I set the lens to one stop down from maximum aperture to have a little more depth of field while still letting as much light though the lens as possible. Two cameras were taken on each dive. A Nikonos V with a 16mm full frame fisheye lens in a specially made housing and a Pentax LX in a Hugyfot housing with another 16mm lens. Kodachrome 64 film was used from the third day once we had exposed and processed E6 compatible Agfachrome 50 to make sure that all the equipment and techniques were working as planned. The reassurance from taking a 500cc E6 processing kit on site which takes up no more room than a picnic cold box is both invaluable and, in unrepeatable locations such as these, must be considered essential.

The visibility was surprisingly clear with up to 50 feet sometimes. March was chosen as suitable because the plankton had not arrived and cold calm spells could produce settled water. Being British waters, the colour cast of the water is very green and our initial shots were taken using a CC60 Magenta filter behind the lens. This reduced the green cast and replaced it with a bluer hue but the extra two stops exposure needed became impractical if sharp, movement free exposures were to be achieved. They were then removed and we reverted to good old

green shots which are much more real and, in this particular case suit the mood of the wreck. There are times when the text books are not always right.

The problem of keeping the camera still during the exposure was the biggest headache. Tripods were used on the first few dives but they took so much time to set up that they were impractical. The only alternative was to use the solid structures of the wreck to brace the camera against and so produce sharp results. This was the most efficient technique but it did restrict the composition somewhat as you were limited to the pieces of solid wreckage. Attempts to hover in midwater proved disastrous as exposure times on the seabed tended to be anything from 1 to 5 seconds.

With such a time restriction in force, using up both films in each camera was not possible so both were still taken but only one used. In the end it was the Nikonos which became the only camera as the reflex camera was very difficult to focus in such dark conditions and was also much bulkier for wedging onto wreckage. The small package of the Nikonos V proved ideal for this job.

The Royal Oak lies on her side, keel up, at an angle of about 45° and so is not particularly well positioned but what is visible is very impressive. The upturned deck starts at 20 metres with the seabed 10 metres lower. The most interesting section is amidships where the main bridge and superstructure lies crushed and mangled. The gangways, now upside down, make attractive props and the side armament of 4 and 6 inch guns make fairly unique subjects but it is on the seabed that the real subjects lie.

As the ship turned over, the reverse weight forced the massive 15" gun breaches to fall away from the ship with the barrels buried deep into the sand. There are 8 such guns in four pairs and their breaches are about 8 feet in diameter. They lie almost under the wreck so the light levels are poor. Typical exposures were around 5 seconds @ F4. Adding a diver gave scale to the shots but he was blurred during the exposure and looked like a science fiction visitor.

Also on the seabed is the main spotting top and flying bridge. They broke during the sinking and now lie horizontally, partly buckled but still highly recognisable. To the stern of this there is the remains of an Admirals Barge or Pinnace which was tied alongside and got pulled down. This 30 foot vessel was crushed amidships as the Royal Oak's superstructure bore down on her leaving her timber bows intact.

Since diving on her in 1979, we were interested to see how much further she had deteriorated and there have been some marked changes. Half ton winches which were firmly bolted to the deck 8 years ago have broken loose and plummeted to the seabed. Diving anywhere under the wreck was avoided as our bubbles could just have been the final push needed to release another piece of weighty machinery on its potentially fatal trip to the seabed.

With just six days available for diving, the weather played an important role and started off flat calm but built up to some 100 mph winds towards the end. This cancelled one and a half days but gave us some spectacular land shots as compensation.

There can never be enough time available to dive a wreck like the Royal Oak. Each dive reveals something new and sees you researching more detail about these Dreadnought battleships which were built on such a scale and with such quality that they will never be built again. She is a unique reminder of a by-gone era.

As a final note to all those who are contemplating writing to the Ministry of Defence for another special permission to dive on the Oak, we have been informed by those directly involved that no such permissions will be granted. However, for keen wreck divers, Scapa Flow has some of the scuttled German Fleet from the 1st World War and these attract large numbers of divers from all over the world. Local dive boats and hotels provide facilities and the area is well worth a visit if only for the stark scenery and historical background.

Above: *The 6" side armament is in 20 metres of water so light levels are higher but you still have to hold the camera very steady.* Below: *The spotting top lies on the seabed at 30 metres but by looking slightly up a shorter exposure was achieved which records the subject almost in silhouette to emphasise the shapes. Nikonos V, 16mm lens. 1/8th @ F4. Kodachrome 64 film.*

Text and photography by Peter Rowlands

UP Overseas 'On Safari'

Paul Langley shows and tells all

Above: *The vibrant life on a shallow coral reef is the first sight which awaits you in the Red Sea. The fish retreat at the sound of exhaled bubbles only to reappear seconds later. A very slight addition of fill-in flash has given subtle sparkle. Nikonos V, 17mm 180° lens, Aqua F1, 1/90th @ F11. Kodachrome 64 film.*

With the end of February looming up, the last thing on my mind was diving, let alone underwater photography. Being a confirmed British waters diver, the thought of floating in warm(ish), clear water seemed but a fantasy until one day during a conversation in the UP magazine editorial suite, an assignment for a weeks diving in the Red Sea was offered my way. First question? .....What's the catch!! - The assignment consisted of a six day "Safari", travelling down the Eastern coast of the Egyptian Sinai Peninsula, diving as we go. Doesn't sound too bad, I thought, so arrangements were made and seeing that I haven't actually dived in the famed Red Sea before, the prospect seemed an opportunity not to be missed. Was it worth it? Read on as I give you a first-timers impression of diving and underwater photography in the Red Sea.

Firstly, what to take. Equipment-wise, try to cover yourself by taking compatible back-ups for all major pieces of equipment, i.e. camera, flashgun, lenses, etc. Try for compatibility so that each flash will work with each camera and so on. Sand and O-rings don't mix , as the obituary of our trip testifies :- two Nikonos III's, one Sea & Sea 35mm Camera and one Oceanic 2000 flooded, one Nikonos II with broken rewind, one automarine flashgun with broken switch (due to four-wheel drive journey) and one leaking housing. Between twelve photographers that's not too bad. So take a page out of the Boy Scouts book and "BE PREPARED".

The dive sites that you will first encounter, such as The Lighthouse and The Canyon at Dahab, I found very suitable for close-up work rather than wide-angle as the scenery is not as spectacular as that which is encountered further down the coast, at Ras Mohammed for example. A housed camera with a 50mm Macro lens fitted comes into it's own in this situation, allowing accurate framing over a wide variety of sized subjects without the probes or frames associated with the Nikonos system which can upset or distract the fish.

Upon entering the water for the first time at the Lighthouse I was confronted by a massive population of various tropical fish whose sole purpose in life was to proceed in my opposite direction at maximum speed. My assumption on Red Sea photography was that all fish had been trained to stay stationary or at least to swim towards the lens until in correct focus/composition, opening their mouths to indicate when to push the shutter release and giving advice on suitable F-stops! Don't be disheartened by this, as I was, because by waiting in a relaxed manner the fish decided that you are not a serious threat to them and will eventually swim into your field of view. Try not to fall into the trap that I did. On my first roll of film for that dive I have a roll of a single Clown fish in every conceivable pose, facing left then right, up then down. I had contracted the condition known as "Machine-gunners finger". Time should be taken over each shot and not panicked by the first subject you find, there are plenty of others and each one is better than the last.

As additional extras, two boat trips were laid on at $30 per person per trip. This seemed rather extravagant at the time but the diving we received in return made it very worthwhile. These boats allow you to gain access to some of the best sites in the Red Sea (our trips were to Ras Mohammed and Jacksons Reef, Tiran Islands) which were suitable for the wider work. A full-frame fisheye lens in this situation worked very well as would any lens with an angle of view of over 80°

Above: *The extreme wide angle of a 17mm full frame fisheye lens enables self portraits to be taken with plenty of background details. My left arm is holding the camera towards me so composition is guesswork.Nikonos V, 17mm lens, Aqua F1 diffused, 1/90th @ F16. Kodachrome 64.* Below: *The fish started to become easier when I stayed in one place and waited for them to approach me. This territorial coral trout cooperated once I settled down and didn't make sudden movements. Pentax LX in Hugyfot housing, 50mm macro lens, Aqua F1, 1/75th @ F16. Kodachrome 64 film.*

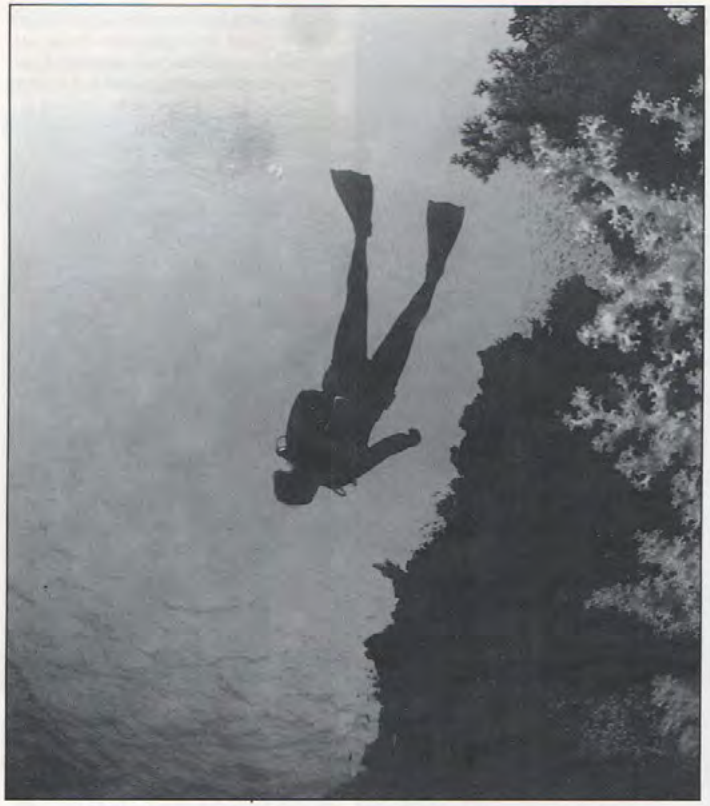
One problem here was that if you did not want to go on the boats, shore diving was not readily available (one member of our group did not want to go and had to argue for a good half an hour to be allowed to dive with another group). Not everyone likes boats and although the boat trips are well worth the effort, some arrangements should be made for the person who prefers to stay behind. Whilst on the subject of surcharges, be prepared for the following expenditure, in US dollars - $30 for each boat dive, $7 dive insurance, $14 Israel/Egypt border crossing and approx $5 tip for the Bedouin taxi-drivers who seemed to appear from nowhere.

Things that I highly recommend you take are - A sturdy pair of diving boots, as most access to the dive-sites involves a trek over sharp coral containing all sorts of sharp objects. The Egyptians will confiscate any diving knife found when you pass through the border, so if they don't actually find it they can't take it (as we encountered quite a few discarded nets..... if you get my meaning)

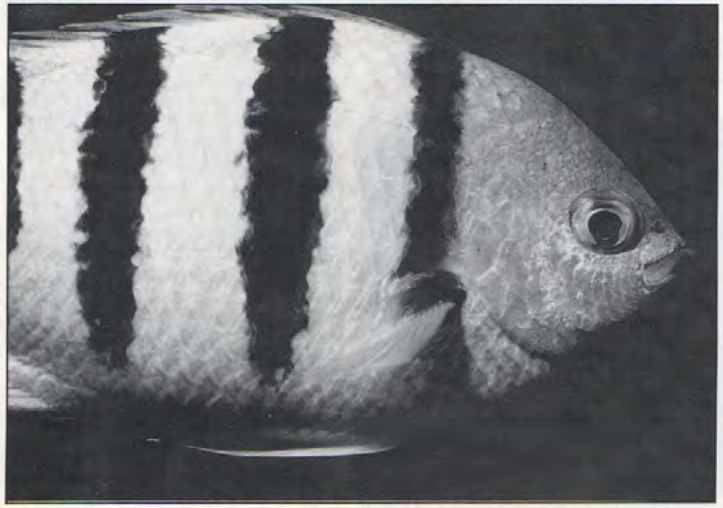
A good torch (non-rechargeable with a plentiful supply of batteries) as it gets dark early out there and you are bound to have at least one night dive. Don't take rechargeable anythings out because once they are dead they will stay that way. No charging facilities were available throughout the Safari, so take alkalines and plenty of them. During your first stay over in Eilat also purchase three bottles of Mineral water before the trip as the water provided did not instill confidence, and a severe dose of "Pharoahs revenge" is not very pleasant or convenient in a wetsuit. Talking of which , I took a two piece 6mm suit with long john and hood and still felt slightly chilled during a couple of the longer dives.

The itinerary for our trip was an afternoon departure from Gatwick for a five hour flight to Ovda, followed by a forty minute coach journey to Eilat, staying the night in the Caravan Club hotel. Arrangements for the trip were made, and we retired to our beds. After an early start for the border and a one and a half hour trip through the border formalities, we were in Egypt and on our way down the coast to Dahab. Just a quick note, remember that your gear will be in the back of a pick up truck so make sure all camera equipment is well packed in a very sturdy case and preferably at the bottom without any cylinders crashing down on it. It is a very bumpy drive with both vehicles being very "open air" so take sunglasses and hold onto your hats.

Arrived at The lighthouse and dived there. Once out we ate (those who recognised what we had in front of us as



Above: *The water clarity and sun penetration make an ideal combination for shots that would be hard to achieve in British waters. Fill-in flash has brought detail into the foreground coral and given added depth to the result. Nikonos V, 17mm lens, Aqua F1 diffused. 1/90th @ F11. Kodachrome 64 film copied 1:1 onto b&w Pan X.*



Above: *Not a perfect fish portrait as the tail is missing but these Sargeant Major fish aren't easy. They dart around all the time. Pentax LX,Hugyfot,Aqua F1,1/75th @ F22.*

On Safari.....

food) and then moved on to the Eel Garden for a evening/night dive. Slept under the stars and arose early next morning(if you survived the wild dogs and bedouin children who don't beg for money, but pens!) and dived at the Canyon (Wide-angle caves everywhere) and then moved down the coast to the Island out from Dahab for our second dive. Don't let the dive leaders rush you after the dive as all that you do is drive back to the campsite and sit around for hours. A night trip to Sharm-el-Sheikh allowed us to board our boat for Ras Mohammed early in the morning for a fantastic day's diving.

Same routine for the next day. On both evenings at Sharm, take the opportunity of washing your cameras in the diving centres fresh(ish) water tank. Beer is also available here as is recognisable food. Camping at Sharm consisted of finding a beach, unrolling your sleeping bag and going to sleep. Everyone is expected to help with the food and if you don't help, you don't eat. These safaris are intended to be an experience in living requirements and help you compare your home-based lifestyle.

For our next dive it was off to Ras Um Sid, for a very enjoyable, if German-ful dive followed by an afternoon dive at The Tower (if anyone finds a weight belt at around 32 metres , it's mine!). Again we slept under the stars, realising by now to wear a tracksuit to bed because it can get cold at night. Sleeping bags were provided with our group but check before going. Take a sturdy cushion or pillow. We spent our final diving day at Ras Nusrani where several people took the opportunity of diving several times (one person recording seven dives). Another night under the stars followed by an easier return trip through the border to stay at the hotel until picked up by the coach for the return trip to Ovda airport and eventually to civilisation.

In short, Speedwing's Red Sea Safari is as much an experience as a holiday with the diving more than compensating for any land-based shortcomings. The cost of the week's safari was £479 and includes all transport and diving. Take spending money, check O-rings very thoroughly for sand and don't use excessive silicone grease, take your own mineral water and plenty of snacks. Experience it. Sleep under the stars, at the waters edge and dive the Red Sea. Experiences and memories are made of this. I wouldn't have missed it for the world.

Text and photos by Paul Langley

Developing creative images

American Steve Rosenberg reports

Underwater photography competitions are getting a lot of attention as the number of underwater photographers steadily increases. New competitions, from dive club level to international events, are popping up everywhere. Competitions provide a good outlet for underwater photographers to test their abilities against that of their peers, and let's face it, its exciting and very satisfying to receive recognition for your accomplishments. With the quality of equipment improving rapidly, the sheer volume of excellent shots being produced and entered is making it more difficult to win awards.

Most competitions include a creative/special effects category to challenge the ingenuity of the photographer. Producing quality creative imagery from the underwater world is not only challenging but it presents a wide open field in which to experiment.Even though early work has produced some outstanding results, we have only just begun to scratch the surface and it is surprisingly easy to get started.
This article will describe a few relatively simple techniques for creating and using high contrast images which will not only provide an excellent foundation for developing your own creative ideas but will also allow you to immediately produce your own creative slides and prints.

Obviously most creative effects are produced in the darkroom. If you don't have a working knowledge of basic darkroom techniques, it might be a good idea to have a quickie course in black and white photography, developing and printing. Of course,anyone can pick up the basics on their own but this simple course will unravel the mysteries of the darkroom and give you the confidence to experiment with your own ideas.

When you expose regular black and white film and process it normally, the result will be a negative with a continuous range of tones from light to dark. The darkest parts of a scene will appear almost clear on a negative while the brightest parts of the same scene will reproduce dark. Parts of the scene with intermediate brightness will reproduce as "midtones". Any image that has a continuous range of tones from light to dark is called a continuous-tone image.

High contrast negatives, or "liths" are simply negatives which produce as black or clear. The midtones are virtually non-existent. The amount of exposure determines which midtones will reproduce as black and which will be clear. The longer the exposure, the greater the amount of midtones which will become black when developed. After development, the midtone areas that have not received enough light during exposure to turn black will be clear.

Above: *This shot of a lion fish is not particularly stunning but its graphic simplicity means it will convert well to lith film.*
Below: *Copying the above shot onto lith film reduces all the tones to either black or white. The increased contrast simplifies the graphic image and readies it for further copying with coloured filters.*

Lith images from either 'continuous tone' slides are fun to make and fun to work with in creating special effect slides and prints. You process lith film like b&w paper so the basic techniques that you use to expose, develop and print lith films are similar to those used in developing b&w prints. With practice, it becomes easy to convert continuous tone pictures into lith images.

This of course gives you an enormous range of possible subjects. You can use your entire collection of colour slides as potential subjects. Even some images that are not particularly great as continuous tone pictures may convert to spectacular high contrast images.

When you begin to work with high contrast lith film, sort through your stack of slides concentrating on simplicity, good contrast, strong graphic lines and identifiable shapes and subjects. It is far easier to make a good high contrast image from a picture with one primary subject which has a contrasting solid background, than from a picture which is busy and less contrasty. For example, start with a picture which has a brightly coloured fish against a dark blue or black background or a dark subject against a light background.

Above: *When copied onto slide film with a coloured filter partly over the lens, the lith shot gains simple colours. The scope is unlimited in terms of colours and effects.*
Below: *Using 5"x4" lith film makes it easier to copy onto 35mm film. Here a light is shone onto a perspex sheet and the lith film copied from the other side.*

CONVERTING A SLIDE TO A LITH IMAGE

There are two ways to convert a continuous tone picture into a high contrast one. One approach is to make a contact print, which is done in the same way you would contact print a set of negatives onto print paper. In other words you simply sandwich the slide on top of the lith film and expose the lith film using an enlarger as your light source. The light from the enlarger will pass through the light areas of the slide, exposing those areas onto the lith film underneath.

The second method is by enlarging. Most special effects techniques are best done with sheet size lith film rather than 35mm. The large size is easier to handle and retouch. I have found that 5"x4" or 5"x7" sheets are best. To make enlarged images, place your continuous tone slide in the slide/negative tray of the enlarger. Focus onto a scrap of lith film using a grain magnifier for accuracy. Turn off the lights and turn on the red safelight used in conventional black and white paper printing. A print easel makes accurate positioning much easier and more repeatable.

The lith film should be placed emulsion side up and held flat with a sheet of plate glass. Make a test strip to test the exposure. A suggested starting figure would be 10 seconds @ F8. As the effects vary with exposure, there is no fixed timing so experiment and make notes so that you can repeat the shots which please you. To begin with, make several different exposures and see how they affect the results.

MIXING DEVELOPERS AND PROCESSING SHEET FILM

The exposed sheet of lith film does not produce an image until it's developed. With most lith developers, you combine equal parts of A and B stock just before use. Part A contains developing agents and Part B is a chemical accelerator. Both parts keep well before mixing but once they are mixed they begin to react with oxygen and deteriorate rapidly.

Available in both powder and liquid form, lith chemicals are available from most of the major film manufacturers including Kodak and Agfa.
Standard paper dishes are ideal for processing lith sheet film. Three are needed - developer, stop bath and fixer. 3/4" depth of chemicals is sufficient. The stop bath is the same as for b&w paper but should be 2 to 3 times as strong, and the fixer should be the same strength as for b&w films. Also, it is helpful in preventing streaks on the film to add wetting agent to the final water rinse.

Place the film emulsion side down and then flip it over. Agitate the chemicals constantly by rocking the tray. The instructions with the film/chemicals will give exact developing times but it is usually 2.75 minutes. Slight variations from this will still produce good results.

Lift the film with print tongs at the corner of the film and let the chemicals drain off for a few seconds. Then transfer it to the stop bath for 15 seconds, drain it again and place it in the fixer. As soon as the unexposed parts of the film start to clear you can turn the lights on. Leave the film fixing for 3 minutes and then wash it for 10 minutes, the last rinse being with wetting agent. Hang the film up to dry but if you are in a hurry, you can use a hair drier to speed up the process.

REVERSING THE IMAGE

After you make a high contrast image, you may want to use it in that form or you may want to reverse the image. Your original slide has been turned into a negative lith image but you may want it as a positive. This is simply achieved by repeating the contact printing process and sandwiching a fresh sheet of

Above: *It is difficult to know which shots will convert well to lith. This cuttlefish wasn't thought to be suitable but when converted and then contact printed, the skin textures became a good focal point.*

lith film with the one just processed and making another reversed copy. You will then have a positive image of the original slide.

CREATIVE PRINTS AND SLIDES.

Once you have made your high contrast lith image, you can use it to produce dramatic b&w prints, colour prints or slides. The simplest way is to copy the lith shot onto conventional slide film. Filters can be added during this process to alter the colours and the sky is the limit in terms of colour variations.

To copy a sheet of lith film, place it on a light source such as a light box and put a coloured filter behind it. Exposure and colour variations will depend on the light source but, as a general guide, take a light reading of the light source without the lith over it, open up by 3 stops and then bracket one stop either side. You then have your creative image on the 35mm format.

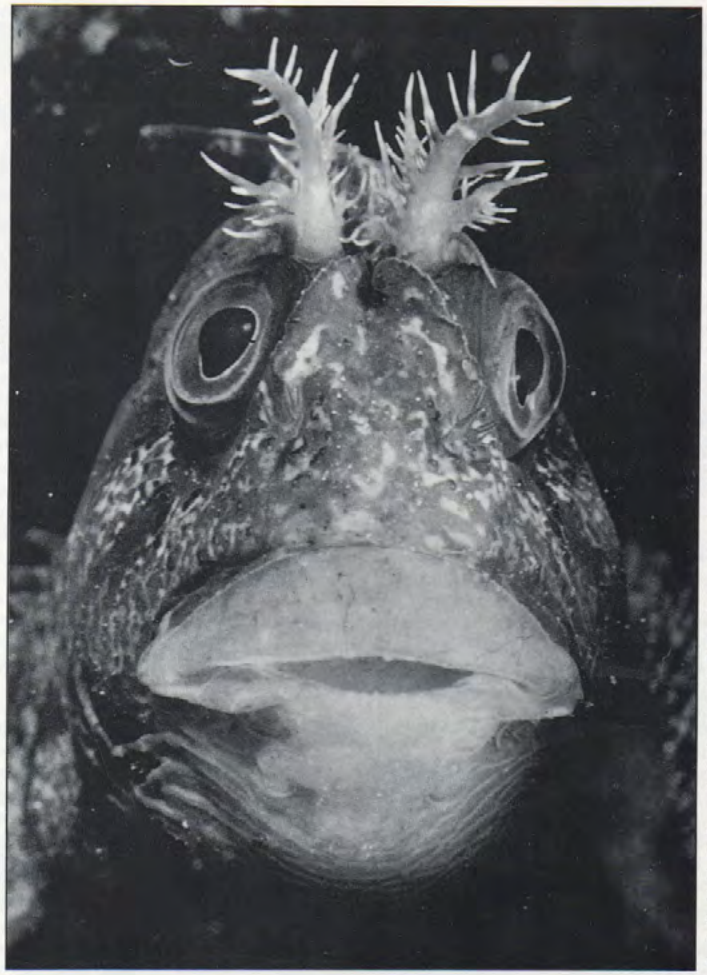
More fancy work can be done by producing two liths and placing them slightly out of register when copying them onto slide film. The results can be seen before you expose film and the variations are enormous and potentially very exciting. The only limit is the amount of time you have available!

Obviously, the procedures described above cover only a few of the avenues for beginning to get into the area of creative imagery but these techniques are sufficient to allow you to produce beautiful creations from your own original slides.

Text and photography by Steve Rosenberg

Next issue, UP will reveal how to make your shots glow like neon lights

Jim Greenfield's front cover Tompot Blenny



For me, the star performers underwater are the creatures that live there naturally. Their form, colour and diversity are tremendous and my interest therefore largely centres around the natural history-type of picture.

I am quite prepared to spend my dives in places where many people would consider to be a waste of their time. Such a dive took place at Fort Bovisand about three years ago - a beautifully sunny, calm day with a "high" stretching from the Azores to Iceland.

Just about everybody seemed to be taking the opportunity to tear out to the Eddystone. Not for me however. These were ideal conditions for one of my favourite photographic sites - just off the rocks in front of the Fort! I am sure I got some pitying looks as I scrambled over the rocks to get into about four or five metres of water. A wasted opportunity you might think, but there are some excellent rock faces in a series of surge gullies. Such gullies, because of the tide and wave action, provide a tremendous variety and profusion of marine life. One added advantage is that because of the depth, dive times can extend up to one and a half hours!

On this occasion visibility was not particularly good as the last of the May plankton bloom was still in evidence. I was prepared for this and was kitted up for close-ups with my usual outfit of a Nikon F3, Vivitar 55mm macro and twin flashguns. I spent a lot of time initially trying to get the whole of a beautifully extended cowrie into sharp focus at something approaching 1:1 reproduction; a virtually impossible task that once again defeated me, resulting in several wasted frames. Then I made my way to a small cave which I knew sometimes attracted shoals of Poor Cod. Sure enough, they were in residence and, as frequently seems to be the case in such situations, the visibility in the cave was better than elsewhere. I was able to get my camera and head inside the cave effectively blocking the entrance. Here the trusty old twin hose demand valve proved its worth once again - no exhaust bubbles to frighten the fish and so several pleasing frames resulted.

Moving on, I had, on a previous dive, seen some narrow holes occupied by Tompot Blennies. I wanted to see if I could attract them out of their holes and get a real close-up showing the bulbous eyes and comical looking horns. Sure enough, one was in residence and he was a really large specimen. Knowing from previous dealings with Tompots that they are greedy little blighters, I had brought along some bits of fish to try and tempt them. I racked my lens well out and adjusted the aperture as I knew any picture would have to be a bit of a "grab shot". A bit of fish down the hole was quickly snapped up and things started to look encouraging. I placed a morsel just outside the hole, focussed on it, and waited. Not for long - out he shot, swallowed the fish and obligingly sat on the ledge for a few seconds looking enquiringly for more. It was enough and I obtained one quick picture before he disappeared.

I didn't really give the incident much more thought as with many of these golden, never to be repeated, opportunities, I usually find 'sod's law' has intervened to muck up the picture in some way. However, once the film was back from the processors, I was more than pleased with the result.

Jim Greenfield

Which film is best?

The film in our camera is the final link in the underwater photographic chain. We've decided upon the camera, the lens (we'll talk about lenses next issue) and arranged the subject. Now all we have to do is expose the film to capture the image.

But just as there are several types of cameras and different lenses, so too are there various films, all capable of recording subjects, but each will give different results from the same scene. Before discussing the various types, there is one feature they all have in common.

FILM SPEED

All films have a designated 'speed' usually quoted in ASA. The higher the ASA number, the faster the film will react to light. The advantage of a faster film is at the expense of image sharpness and contrast. The faster the film the grainier will be the results and there will be a loss in contrast. Modern emulsions are producing excellent images from faster and faster films and making our job underwater much easier.

There are three main categories of film speed. Slow is from 25 to 64 ASA, medium is from 100 to 200 ASA and fast is from 400 to 1600ASA and higher. For underwater use, the most widely used films are those of 100 ASA where they are slow enough to give excellent quality but not so slow that you have to use a tripod. For ultra critical close up work with electronic flash, you can use the really slow 25 ASA films as small flash to subject distances give small apertures. For deeper work, faster films allow shots at depth and the resulting slight loss in quality is just a minor disadvantage.

There are four main types of film in popular use underwater - instant film, black and white negative, colour negative and colour slides. As the majority of us use 35mm cameras, we will concentrate on this format of film.

POLAROID INSTANT FILM

This film is available in two forms, one which produces prints and the other which gives slides (transparencies). From the underwater point of view, the print films are not relevant as they are usually for cameras specially designed to use this film. Also, each frame has to be removed from the camera after each exposure and a covering layer then peeled off to produce a print. Having to surface each time you take a shot is out of the question so we can forget this film.

The instant slide film, however, does have an application for it is available in 35mm,12 and 36 exposure rolls and can be exposed like conventional film. Once exposed, the film is loaded into a special small developing machine together with some 'dry' chemicals and the slides are processed in about two minutes! Such speed is gained at the expense of quality but if you need to know if your exposure is on target or if the equipment is working OK then this film is ideal. It is expensive (about £8 for a 12 and £12 for a 36 exposure roll) and the processing machine is around £100 so it has to earn its keep or be bought by a group.

Once you have assured yourself that all is well you can then use conventional film, safe in the knowledge that you are producing correct results.

BLACK & WHITE NEGATIVE

Rapidly losing popularity for underwater use, this film, when exposed and processed, gives negatives with reversed tones. When the negative is projected/enlarged onto light sensitive printing paper, the image is reversed again to give normal black and white tones.

Even on land, this type of film has faded away as the attraction and lower cost of colour films has appealed to the mass market. The purists still quote black and white as being the only photographic medium and in a way they are right for it is a good film for translating mood and shape; the eye is not distracted by colour.

However, despite its qualities, black and white film is too rarely used underwater and some competitions do not even include it in their categories because of previous poor entries.

COLOUR NEGATIVE FILM

This is the same as black and white in that a negative is produced after exposure and processing which then becomes a positive when it is printed onto colour paper.

It is not a widely used film underwater which is strange for it has a lot going for it. It's main feature is being tolerant to incorrect exposure which could be a major advantage! You could be up to two stops over and one stop under-exposed and still get a perfect result. This is because the variations in exposure on the negative can be compensated during the printing. If you have underexposed the film, you overexpose the printing paper to get a perfect result. Modern laboratory machinery will do this automatically with amazing accuracy and at a price which makes colour negative film very attractive.

Other advantages are that, if you do your own printing, you can enhance the colours to improve the results. Strong colour casts can be reduced during the printing. You can ask your processor to do this if you don't do your own printing but this can only be done if the prints are done by hand rather than with a machine. The cost of this is higher but it can be well worth it.

You can even make slides from negative if you want. Film labs can do this or you can by copying the negative onto 'print' film which comes out as slides. In this way, you can have the best of both worlds. A top quality print for competitions and a good slide for giving slide shows. This advantage is only available if you have the time for it is yet another process to go through.

Most people decide that they want either slides or prints and then stick to it but, as you get more choosey, you may want a print from a slide and vice versa.

COLOUR SLIDE FILM

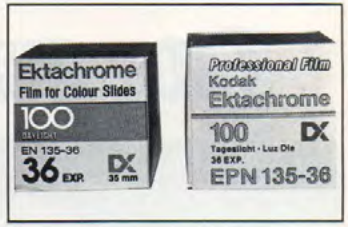
This is by far and away the most widely used film underwater. The processed film is a positive image which can be viewed through an eyeglass or projected onto a screen. The end result is sharper and the colours are more saturated as there has been only one process to produce the final image and it is probably this which appeals to the underwater photographer.

Slide film is far less tolerant to exposure inaccuracies. A stop either way will make a significant difference and such intolerance makes us 'bracket' our shots. This technique is designed to guarantee a correct result by taking one exposure at the estimated correct settings and the one at one stop less and another at one stop over. With so many variables underwater, using this technique is not an admission of defeat but is a sensible method in our time-limited situation.

Another reason for its popularity is that magazines prefer to use slides and, as most of us start with wild ideas of being photo-journalists, we tend to use the film to fit this purpose. The fact that magazines can work well (and even better) from colour prints is just another indication as to the level of photographic knowledge which most magazines have. However, we seem to be controlled by such bodies so most of us abide by the 'rules'.

Granted that prints are easier to look at but slides have the advantage of being much more impressive when they are projected onto a screen and can be seen in much more detail. This benefit seems to outweigh the hassle in setting up the projector and darkening the room for optimum viewing.

Slide film is sometimes available in two forms - amateur and professional. Unless you are extremely critical and can store the films in a fridge until just before exposure and process them right away, the professional films are a waste of the extra expense. In many ways, the amateur films are better suited to underwater photography as they are designed to age slowly and still give optimum results. There should be no improvement in image quality with



professional film, the main advantage being controlled colour balance but seeing as we are operating in a medium where the colour of the water varies from hour to hour, there seems little point in using professional film.

Whatever you decide as being the most suitable film for you, practical advice says stick to one speed of film to ensure consistency. Once you have mastered the exposure you can then consider another speed or another type of film. If, when starting, you keep changing films, you will never get used to one in particular and your results are sure to be erratic.

Peter Rowlands

LADY JENNY V

RED SEA EGYPT

1988 UNDERWATER CALENDAR COMPETITION

*** £4800 PRIZES ***

Red Sea Adventures Ltd intend to produce a high quality calendar for 1988, planned to be available at the Brighton Festival October 24th/25th. It will feature 12 underwater photographs taken by British divers in the Red Sea during the last 5 years.

Entries must be received not later than 30th June 1987.

Selection of the 12 winning entries will be made by Sir Peter Scott.

Prizes will be 12 vouchers of £400 each towards a holiday on Lady Jenny V to be taken by December 1988.

For full details send a stamped addressed envelope to:-

[redacted]

The competition is open to all British divers who are members of either the BSAC or Sub Aqua Association.

Photographs must have been taken in the Red Sea and during the last 5 years. Original transparencies to be entered, these will be returned after the selections have been made. However whilst every care will be taken Red Sea Adventures Ltd., Twickers World or Speedwing cannot accept responsibility for loss or damage.

2 transparencies only may be entered, clearly marked on the frame with name, date and location. Please also give name of travel agency you booked the holiday with and boat or hotel where you stayed.

Entries must be submitted by 30th June 1987.

Winners will be announced by 1st October 1987.

- -TEAR OFF ENTRY FORM - -

Name...

Address...

....

....

....

Date of holiday...

Tour Operator...

Name of Boat/Hotel...

Tel: (Home)...

Tel: (Work)...

Location of entry

No.1...

No.2...

Name of the subject

No.1...

No.2...

I hereby agree to the rules of this competition and accept that neither Red Sea Adventures, Twickers World or Speedwing will be held responsible for loss or damage to my entries. Furthermore I agree that Red Sea Adventures will have the right if they so wish to the publishing rights of the above entries whether in the event my entry is successful or not.

Signed________________________ Print Name________________________

AGFA COMPETITION

"Exciting Lighting"

Win 10 rolls of Agfa 50RS film

Martyn Farr of Crickhowell in Wales wins this issue's prize with a shot taken in an old silica mine in Glyn Neath, South Wales.

An experienced cave diver, Martyn used a Nikonos 111 and 28mm with 200 asa Ektachrome. Bulb flashes were used for all of the lighting, one fired from the camera and the other triggered with a slave sensor placed behind the diver.

A four man team was needed - one to hold the flash behind the subject, one holding the flash on camera , the photographer and the model.

The slave sensors were made by a buddy diver specifically for these sort of shots.

E.Childs of Aberdeen sent this pleasant shot of water-dappled light.

It shows a good use of natural light to produce an out of the ordinary result and is one which should be possible in most waters with a basic camera.

Diving towards sundown can achieve some dramatic shots as the obliquely angled light is broken up by the surface into a series of patterns and colours. Converted to black and white, the shot still works as it is more about pattern and mood rather than colour.

Next issue's subject: Sunburst shots in the UK

There's no better way to add sparkle to your shots than with a sunburst. Even in the UK, this simple technique can be achieved despite our sometimes limited visibility. A straight sunburst shot isn't what we're after. We want a subject in there too such as marine life or a diver.

Entries must arrive by July 1st and be 35mm colour slides. Please pack them extremely well and include some details of where they were taken and with what equipment. The number of entries coming in so far is not high so get digging in your libraries and you stand a good chance of winning of seeing your shots in print. The more entries, the more colour will be used. (That's why we've printed two in black and white only this issue). Do it now and you could win 10 rolls of AGFA slide film.

Competitions worldwide. Brighton '87.

Its on again! One of the most established underwater photography festivals in the world is taking place on October 24th and 25th in Brighton. Top international speakers are lined up to present up to the minute papers and all of the winning competition entries will be on display throughout the weekend. Its a chance not to be missed.

The event is being organised by Diver Magazine, [redacted]

Short Ends

Brighton '87. Big Prizes.

This event, being held on October 24/25th is organised by Diver Magazine and promises to be a major happening in the underwater photography calendar.

At the time of going to press, the prizes for the competition are already beginning to look very tempting. Top of the list in terms of expense must be a £2000 Rolex Submariner watch which will go to the Grand Master of underwater photography.

At the top of the underwater photography prizes must be a Nikonos outfit donated by Ocean Optics Ltd in conjunction with Nikon UK Ltd. This fabulous prize is a Nikonos V with 35mm lens and an SB103 TTL flashgun worth nearly £850! In a combined gesture, these two leading companies are supporting underwater photography with this generous prize which will be welcome in the camera outfit of any aspiring underwater photographer.

Further details and a competition entry form can only be obtained from Diver Magazine, [redacted]

Turks and Caicos

Moss Expeditionary Travel from Southend-on-Sea are offering trips to these interesting islands in the British West Indies. There are over 30 islands, some of which are still uninhabited and the diving is almost virgin.

It is thought that Grand Turk was the first landfall of Columbus and there are a host of ancient wrecks in the surrounding waters. Provo Turtle Divers provide the diving facilities and Moss offer ten 2 tank dives with everything included.

Each trip is escorted and there are trips planned in June, July and August 1987. Flights go from Heathrow to Miami and from there to Turks and Caicos where Provo boasts an international airport and first class accommodation..

Prices vary from £1195 to £1775 depending upon your requirements and Barry Moss is the man to ask for at Moss Expeditionary Travel, 7th Floor, Mariner [redacted]

It sounds a good place and anyone going could write an article for UP about this comparatively new diving area?

Canon AS6 Winner!

The Canon AS 6, worth over £150 and kindly donated by Canon UK Ltd, was won by John Porteous from Glasgow.

The answers were as follows:

1. The lens covers a wider angle underwater
2. 10 metres
3. Yes
4. Yes
5. Auto film loading, exposure, film wind, rewind, flash exposure and film speed with DX films.

Over 30 entries were received in time but, surprisingly enough, not all were correct! Some thought it was autofocus while others were confused by the difference between positive and negative buoyancy. The majority, however, knew the main features of the AS 6 which make it a useful underwater camera for use down to 10 metres.

Our congratulations, however, go to Mr Porteous and we hope that the Canon AS 6 gives many years of enjoyment.Our thanks also go to Canon UK Ltd for their generosity.

UP and coming next issue

UP Overseas. The Marine Parks of Cayman

Nancy Sefton describes the marine parks in her native Cayman Islands and how to shoot them.

UP in the UK. The BSoUP Splash-In

This unique annual event attracts underwater photographers from all over the country. UP reports on the day both behind and in front of the scenes.

More competing with composition

Dr Mia Buehr concludes her productive theme to give you all the facts about this essential ingredient.

Jazzy neon liths explained

Peter Rowlands shows how to make your shots glow like never before without setting fire to them.

Sea and Sea 20mm lens review

This interesting arrival goes under the underwater microscope to see how it performs.

Basic Course

Choosing the right lens is crucial for successful shots. UP describes the types available and their uses.

Plus

Agfa Competition results, New Products, Equipment reviews, How was it done?, Classifieds, Short Ends and, as usual, much much more.

Subscribe and succeed or tell a buddy about UP?.

Classifieds

DIVING THE MALTESE ISLANDS by Anton Sammut. £5.30 including p&p from SEA Publications, PO [redacted]

NIKONOS V with 35mm lens for sale. £300. [redacted]

NIKONOS 111 and flash in VGC for sale. Complete with meter, arm, baseplate, viewfinder, case etc... £325 ono. Tel [redacted]

NIKONOS 111 with 35mm lens for sale with Sea and Sea Seameter. £295 ono. Tel Mr Nelson [redacted]

BIRTHDAY. ANNIVERSARY SPECIAL OCCASION.

A copy of "Underwater Photography" (Published by Focal Press) signed by the author, John Turner, makes a special gift. Limited number at less than half publisher's price. Send £6 (inc UK postage) and message required to: Camera Alive Limited, Unit 21 [redacted]

ST KILDA - Jean de la Lune. August 1-14th. Details from David Cunningham [redacted]

VIDEO OUTFIT: VHS-C Camcorder (GR-C1) and underwater housing (home built), two powerpacks, battery charger, RF modulator, shoulder brace, etc £699. Tel [redacted]

NIKONOS SB101 flash for sale. Used twice. Used for surfing pictures but found not suitable. £200 ono. Tel 01 [redacted]

Nikonos SB 102 Speedlight for sale. Mint condition. Tel Ocean Optics [redacted]

NIKONOS SB101 flash unit complete. £150. 35mm Nikonos lens £60. Both very good condition. Tel 0782 [redacted]

FOR SALE Close up lenses and accessories for the Nikonos. 6", 9" and 12" subject distances. Interchangeable underwater. Send 18p stamp for specs and prices. Z&A, [redacted]

FOR SALE Subawider 11 Nikonos wide angle supplementary lens in mint condition. Cost £155. First £100 secures. Contact Mr Paice, [redacted]

A BOX SURROUND makes your ad stand out from the crowd. Only £5 extra, they are worth it.

Nikonos SU101 sensor. £25. Oceanic Nik 1VA progrip £9. Sea & Sea Macro tube unused £37.50. Sea & Sea Flex Arm 111 £40. Sea & Sea baseplate £10. Nik flash blanking plug £1. Nik 1VA O ring kit £2.50. Subawider + Viewfinder £95. OS 2000 flash complete with arm and plate for Nik 1V/V. £145 Nikonos 111 + 35 £275. Tel Paul Langley at [redacted]

28/35mm lens case £10. Nik 111 case £5. Q lite battery £12. QXL lite 110volt charger £7.50. L86 housing w/o meter £10. Oceanic 21" ball joint arm with Nik 1VA plate £59. EO male coiled cord £35 Sunpak 32 quick charger £8 [redacted]

HIRE a complete underwater video system from £50. Ideal for training, holidays. For details [redacted]

Nik 1VA,35,28,80 lenses. Close up kit and SB101 strobe. All in excellent condition. [redacted]

Always mention UP when answering adverts

CLASSIFIED ADVERTISING ORDER FORM

Only 25p per word. £5 for a box surround

Please include the following classified advert in the next issue of UP.

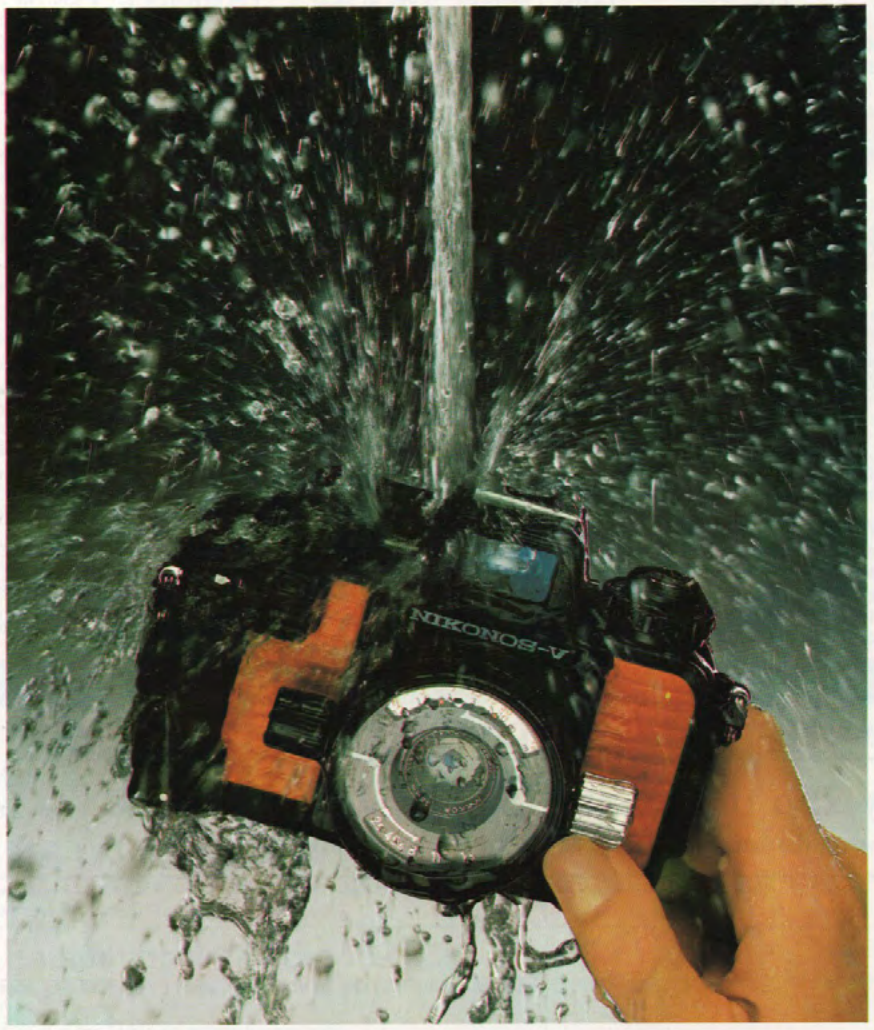
NAME & ADDRESS _____

_____ Phone Number _____.

Classifieds only cost 25p per word but must be prepaid. Phone numbers are one word. Deadline for adverts is the 1st of the month preceding publication date. i.e. 1st May for June/July issue.

Make cheques payable to UNDERWATER PHOTOGRAPHY and send to [redacted]

ACCESS and VISA most welcome.Card No..... Exp date



THIS NIKON SHRINKS FROM NOTHING.

THE NIKONOS V IS UNIQUE. It's a 35mm waterproof camera that will work under the toughest conditions you could possibly find. You can take it diving (down to 50m), skiing, potholing, in fact anywhere you'd never dare take an ordinary camera for fear of getting it wet or muddy. And because it's a Nikon, you can rely on it not to shirk on the performance side. It's micro-electronic brain takes care of that. If you want something more than a fair-weather camera, you need the Nikonos. It really does shrink from nothing. Not even the wash.

Nikon

MORE DETAILS FROM: NIKON UK LTD., NIKON HOUSE, 380 RICHMOND ROAD, KINGSTON UPON THAMES, SURREY KT2 5PR. TELEPHONE: 01-541 4440.

UP5
will be in
UwP118
due out on
1st Jan