Underwater Photography

a web magazine

Aug/Sept 2003

MotorMarine 111

Aquatica Fuji S2

Tetra 5050

Olympus 5050

Milne Bay PNG

Raja Empat

Bamboo nights

Double exposures

Filters

Easy close ups

Book/DVD reviews

Visions 2003

Think Digital

With digital cameras underwater photography just got easier and a whole lot more fun. No more wondering if you got the shot, view it instantly on the camera's LCD, don't like it, delete it and take another. At the end of your dive you only have images you want to print, publish or email. No film to purchase or process.

Beginner, amateur, or pro, simply get an Ikelite housing for your favorite digital land camera. Choose from Canon, Kodak, Nikon, Olympus or Sony, Ikelite makes housings for several camera models from each of these manufacturers.

Ikelite supports their underwater digital housings with a full line of accessories. Choose from tray and handle mounts, digital Substrobes, DS Sensors for full TTL automation, or an EV Controller that gives 10 power settings in 1/2 stop increments and a choice of arm systems.

New digital cameras are being introduced at a rapid pace. For the latest information on new digital housing models visit our web site.

www.ikelite.com

DS125 Substrobe w/ diffuser

DS50 Substrobe

DB Arm system

EV Controller

Tray & Dual Handles

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Digital Still Housings for:

Canon G1, G2, G3

Kodak DC-220, DC-260, DC-265, DC-290

Nikon Coolpix 800, 880, 885, 950, 990, 995, 4300, 4500, 5000, 5700

Olympus C-700, C-720, C-730, C-4040, C-4000, C-3040, C3030, C3020, C3000, C2040, C-5050

Sony DSC-S70, DSC-S75, DSC-S85, DSC-F707, DSC-F717 and many Mavica models

Compact Digital Housings for:

Canon S100, S110 Digital Elph, Digital Ixus, Ixus V

Nikon Coolpix 2000, 2100, 3100

Olympus C-50, D-230, D-360, D-340L, D-320L, D-220L, D-340R, D-380, C-120

D-SLR Housings for:

Canon D30, D60, 10D

Fuji S1 Pro, S2 Pro

Nikon D100

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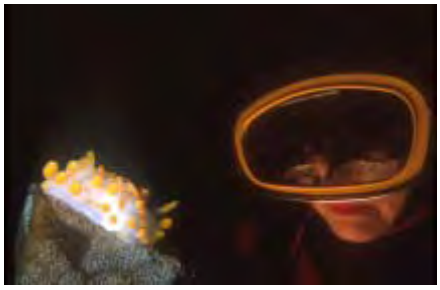
a web magazine
Aug/Sept 2003
e mail uwp@uwpmag.com

Contents

Cover by Demelza Postlethwaite



Editorial

Digital dilema

You'd have to have just got back from a trip to Mars to not notice how digital cameras are affecting the popularity and quality of underwater photography.

The capability of both the entry level and digital SLR cameras is groundbreaking but they are creating major problems for underwater housing manufacturers.

Perhaps the announcement of the new Nikon 10.5 digital fisheye lens and D2H camera will explain the situation. Details of these two new products were released in mid July but they would not be readily available until October.

This delay means that potential customers, particularly for cameras, are faced with the dilema of whether to wait for the new camera or bite the bullet and purchase the current model which they know is about to be discontinued.

I suspect most technophiles would decide to wait but they then have another wait until the underwater housing manufacturers can buy the new camera in October and then begin their design and production process. This can take many months.

Digital cameras are coming to the market so regularly that, by the time a manufacturer has a housing ready there will almost certainly be rumours of the next camera in the pipeline and this definitely affects sales.

The solution is for camera and housing manufacturers to work more closely and we can see the results of this with Olympus in Japan. I understand that they work with a specialist polycarbonate moulder who is privy to the development department's plans. This crucial privelige gives them several months in which to design and produce the housing.

The result is that an Olympus underwater housing arrives on the market at the same time as the camera. This maximises the potential sales of housings and customers are reassured that their camera is the latest model.

Wouldn't it be nice if the success of this co-operation was noticed by Nikon and Canon? If they joined forces with a quality housing manufacturer they would make life very difficult for other manufacturers and we would get a housing as soon as the camera arrived.

Am I asking too much to hope this will happen before the Nikon D200 is available?

AF DX Fisheye Nikkor 10.5mm f/2.8G ED

The announcement of a direct replacement for the 16mm full frame fisheye must be welcome news from two standpoints.

Firstly it completes the capabilities of digital SLRs such as the Nikon D100 and secondly it confirms Nikon's commitment to a smaller chip size .

Full frame 35mm chip cameras are available but at a high price and nearly all manufacturers have had real problems getting them perfected. In addition most of them have hedged their bets and also produced smaller chip cameras which have proved much more popular due to a greatly reduced price.

The resolution of the smaller chips is still amazing and the images they capture have been used in magazines at up to A3 size so I would suggest that this capability is more than most underwater photographers really need.

So maybe underwater photography has truly turned the corner into a digital age and one thing's for certain - there's no looking back.

Underwater Photography

is published by

PR Productions

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email:info@oceanleisure.co.uk

News, Travel & events

Divequest photo trips 2004

2004 will see Divequest offering more unique photography orientated group trips.

In January, Martin Edge will lead a group of underwater photographers to Dominica for a Photoquest in search of the perfect image. Dominica's warm waters and the opportunity for unlimited shore diving as well as boat diving makes for maximum photo-shooting under the guidance of mastercraftsman Martin Edge.

Jeremy Stafford-Deitsch returns to Walker's Cay in late January to interact with the Bull Sharks at close quarters. Film crews, videographers and top underwater photographers make the pilgrimage to this world-famous Bull Shark site for some close encounters with these fascinating and much-misunderstood animals.

If big animals shots appeal, then Gavin Anderson's trip to the waters of southern Mozambique in May should be high on your list. Whale Sharks, herds of Devil Rays, Manta Rays and dolphins are the subjects in question.

Alex Mustard wants underwater photographers to get 'Up Close and Personal'on his trip to Grand Cayman's reefs in September. Alex has spent a great deal of time in Cayman waters, and has scheduled this trip to coincide with the coral spawning.

Early September will see photo-journalist Charles Hood return (by popular demand) to the Channel Islands of Southern California to check out the Blue Sharks and the kelp forests.

In mid September Malcolm Hey will lead a second trip to the seriously remote and mega fishy reefs of West Papua's Raja Ampat Archipelago. A spirit of adventure and loads of film are all you need to enjoy this trip.

October will see Martin Edge in Wakatobi, one of Indonesia's finest island locations where the emphasis is on underwater photography. E-6 processing and unlimited diving, along with Martin's input and prolific reefs, makes this a great choice for a winter break.

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Email: hilary@divequest.co.uk

www.divequest.co.uk

London Universities U/w Photography Competition

Imperial College Underwater Club welcomes entries from divers under the age of 25, full time students or members of any London University or youth diving for the 1st London Universities Underwater Photography Competition.

The entry categories are as follows:

"Macro"– 1:4 or smaller shot in the British Isles; "Wide-Angle/Normal"– any image larger than 1:4 shot in the British Isles; "Conservation"– any image from above or below the water with a marine conservation theme; "Foreign Depths"– any image from around the world and "Creative" - artistic, abstract images.

The closing date is 20th February 2004.

Prizes include Underwater strobes from Sea & Sea, wet-suits from O'Three, diving equipment from Mikes Waterfront Warehouse and regulators from Apeks and more. All proceeds from the event will go to the Marine Conservation Society.

Further details can be found on our web site www.londonuwphoto.org.

Mark Webster Bonaire Photo Workshop January 2004

Join Mark on this exciting location and enjoy a rare opportunity to capture the fascinating underwater life of Bonaire.

Minimum group size: 12 divers. £1895 per diver based on 3 people sharing a two bedroom apartment.

Price includes scheduled flights from Heathrow. 9 nights accommodation – room only. 7 days diving – 2 boat dives per day + unlimited shore diving. 1 x roll of E6 processing per day [additional rolls $10 each]

Contact Mark Webster for more information on 01326 318307 or by e-mailing markwebster@photec.co.uk. Web: www.photec.co.uk

To make your tour reservation call Oonasdivers on 01323 648924 or e-mail info@oonasdivers.com. *Web: www.oonasdivers.com*

New products

Ikelite Housing for Nikon Coolpix 2100 &3100 Digital Cameras

These Nikon digital cameras provide excellent results at a very realistic price.

Drop into the housing for a fun and satisfying experience. All camera functions are accessible when in the housing.

The housing is molded of corrosion free clear polycarbonate and operates safely to 125 feet. The flash built into the camera operates fine in the housing and provides very good photos.

An optional DS series strobe placed farther from the lens improves the photographs by reducing the illumination of particles in the water.

Optional #9523.31 Tray with Release Handle provides near neutral buoyancy and is required to attach optional SubStrobes.

Optional strobes do not operate TTL with these cameras, but the Manual Controller provides 10 power settings with the DS-50 or DS-125 digital SubStrobes. For further details visit **www.ikelite.com**

AF DX Fisheye Nikkor 10.5mm f/2.8G ED

This lens is the Nikon digital version of the AF Fisheye Nikkor 16mm f/2.8D. The AF DX Fisheye Nikkor 10.5mm f/2.8G ED and its 16mm counterpart both provide a 180° angle of view, the former achieving that on a Nikon digital SLR with a DX-size sensor, the latter on a film camera. These two lenses are nearly identical in size, weight and appearance.

It is compatible with Nikon digital SLR cameras with DX-size image sensors (D1, D1X, D1H, D100, D2H)

Minimum Focus Distance 5.5 in. (14 cm).
Filter Type - Rear bayonet

Dimensions 2.5 x 2.5 in. (6.4 x 6.4 cm)

Weight Approx. 10.8 oz. (306 grams)

For photographers who want an especially wide view of the world and straight edges, Nikon Capture 4 will include two different fisheye-to-rectilinear software filters, offering either horizontal or vertical correction of the curvature of fisheye lenses. One of the corrections in particular allows for straight-edged panorama shooting with the AF DX Fisheye Nikkor 10.5mm f/2.8G ED. Nikon also promises better optical performance than its 16mm counterpart.

Sea & Sea Motor Marine III

The MM III has many features never before offered on an underwater camera. Features that let you photograph the way you want. Create beautiful images of the underwater world with a new level of freedom and expression.

The standard 20mm f3.8 primary lens makes it easy to focus. The wide-angle f3.8 lens has extended depth of field, allows minimum focusing distance of 23cm (at f22) and provides spectacular wide and macro photography. With its 77 degree underwater picture angle, the Motor Marine III captures a near panoramic view of the underwater world.

Optional macro lens 3.5T, macro lens 2T, 15mm wide conversion lens, and fisheye lens are all bayonet mounted for easy attachment and removal underwater .

Two-point focusing: Takes the guesswork out of focusing

User can select either infinity setting or 0.6m setting and just press the shutter release. No more out of focus shots. Distance~infinity setting: 0.7m~infinity / 0.6m point: 0.4m - 1m (at f5.6).

TTL external strobe triggering is available with all shutter speeds. The strobe connector enables TTL photography using Sea & Sea YS-series strobes (Nikonos V-type connector, connects to all strobes except YS-25DX and YS-60TTL/S).

A target light turns on for 5 seconds when the shutter release is pressed half way. This feature can be disabled with an ON/OFF switch when not needed.

The MotorMarine 111 is depth rating to 60m/ 200ft

For full details, visit **www.seaandsea.com**

Inon Z180 strobe

Designed specifically for digital cameras, the Z180 is slave triggered. Unfortunately no English instructions were available but it looks like it will work on Auto with many Olympus and Canon cameras.

UwP will feature more details in the next issue.

New from Ultralight

Ultralight makes a less expensive Inon strobe adaper that is just like the Inon adapter but which uses a black o-ring. The importance of that is that the Inon red o-ring gets cut up with the newer style clamps.

Ultralight also makes a longer version of their BA-IK the piece that fits into the Ikelite push button handle. The longer version will enable the TTL slave sensor or Manual controller to be attached to this piece and have it stay in one place vs having to use a triple clamp and a TTL adapter which is fine; but when you move one thing in the triple clamp the sensor moves and then doesn't pick up what light it is supposed to be picking up.

Ultralight is reindtroducing a port ring adapter for the Nexus macro port. Ultralight made these port ring adpters in the past and then stopped due to no call; but there now seems to be some call.

For details of these new products and their entire range of strobe arms and adaptors visit **www.ulcs.com**

Aquatica Fuji S2 Housing Review

By James Wiseman

The flat port with manual focus for the 60mm Micro

The camera fits pretty snugly inside the housing, leaving space under the tray for a moisture alarm, etc. The stabbing guides are visible at the bottom corners of the housing.

Shortly before Seaspace, Aquatica had a prototype of their S2 housing ready for testing. Since I live in Houston - where Seaspace is held - Aquatica sent me the engineering sample to evaluate before displaying it at the show. I was fortunate enough to get out to the Flower Garden Banks on a trip before Seaspace, and again on another trip again shortly after receiving my 12-24DX lens. I have now made 18 dives with the housing, and while it is a prototype, it looks like very little will be changed for the production units. But keep that in mind while reading the review – this housing will get even better.

Size and Construction

I'll start out by saying, this is no small housing! The camera is almost as big as a Nikon F5 and the housing is sized to fit. With that said, it is still smaller than many of the housings available for the D100, D60, and S2. However, if you're used to a Sea and Sea F100 housing, be prepared for a little more heft. The housing is cast and machined aluminum with aluminum handles, and an acrylic window fitted into the back of the housing. The window gives the user unimpeded view of the color LCD and the Function LCD on the back of the camera.

The port opening is almost 4 1/2" inches in diameter to accommodate just about any lens. The aluminum housing is coated with a silver finish and a clear-coat on top of that, as well as anodized parts. The main seal is a single o-ring in a groove on the front of the housing and a face seal against the rear. To aid in aligning the rear of the housing when closing it up, Aquatica has fitted two stabbing guides to the bottom of the housing that fit into recesses in the rear piece – a nice feature.

Functions

The following photo should give the reader a good understanding of the control layout for the S2. All controls are available through the housing save for the AE/AF lock button.

Functions accessible from

A view of the housing back showing the layout and function of the controls.

the photographers fingertips (without taking the eye away from the viewfinder) are:
Zoom
M/S/C Focus Mode
Shutterspeed
Manual Focus
Shutter

To adjust the aperture, the photographer must take his/her hand off of the right handle and reach to the back for the Aperture Control on the rear of the housing. One control that I really like is the "stay depressed" lever for the Exposure +/- and the Flash +/-. When the knob is pulled out Ω or all the way, it depresses the button for the Exposure or Flash comp. – then another knob can be rotated with one hand to the desired setting. If you are shooting in TTL mode, this control comes in very handle for adjusting your lighting at the start of a dive.

Available Ports and Lens Combinations

I tested the housing with the standard flat port with focus, the 8" dome port, and the extension for the flat port that accommodates the Nikkor 70-180 ED Macro zoom. With this combo, and perhaps a different extension for the 105mm, just about any lens can be used. This port combination will enable the photographer to use all of the lenses that I believe will be popular with the S2:
60mm Micro
105mm Micro
70-180 Micro
12-24DX
16mm Fullframe Fisheye
18-35ED
17-35AFS

For my dives, I used the 12-24DX, the 16mm Fisheye, the 60mm Micro, and the 70-180 Micro. I was very pleased with the zoom and focus gears that Aquatica provided – they fit up easily and can be left on the lenses in between dives. The following photos show the ports and extensions.

Workability

This unit was designed specifically for use with the Fuji S2 and the Nikon D100 and it shows. The controls are placed right at the photographers fingertips and feel just like an extension of the camera. The camera mounts to the front tray of the housing so the back can be easily removed by opening the locking lid snaps. There are only two snaps, one on each side of the housing.

What I like most about working with this setup is that the camera is very easy to service. Pop open the back and the memory card can be easily removed and changed. After slightly loosening the tripod screw, the battery tray slides out for a quick battery change as

shown below.

On the front of the housing the bayonet port secures easily and smoothly. Changing lenses is especially quick as both the lens and focus/zoom gear can be removed through the ample port opening. Aquatica has also fitted a lever to release the lens from the camera body.

Getting in and out of the water the housing is fairly heavy when equipped with dual strobes and arms. The divemasters were certainly giving me a hard time about lowering it down over the side on the entry line.

Once in the water, the unit becomes much more manageable. I would estimate that the prototype I used weighed almost a pound underwater when fitted with only the flat port. The balance was good but the unit was a bit heavy and took some getting used to. When used with the dome port or the flat port with the extension for the 70-180 Micro, the setup felt a lot closer to neutral

– but still slightly negative. This is probably because the housing is built like the proverbial brick outhouse. Aquatica thinks that they can lighten the production housings by quite a bit, which I think would be a definite improvement.

As you can see from the photos, when the flat port and extension are mounted the housing starts to resemble a howitzer, but it is really pretty easy to handle underwater. The following photo shows how the housing can be held with the right hand for hitting the shutter, and cradled in the left hand for stabilization and turning the manual focus gear.

When rigged up with strobes and arms, the setup is pretty substantial.

The unit I tested was fitted with dual Nikonos bulkheads. One was set up for manual shooting and one for 5-pin TTL. I tried both and got good flash sync with both using a dual TTL sync cord. This is one area where the S2 really shines.

Conclusion

Basically, the Aquatica S2 leaves very little room for improvement. For an underwater photographer looking to make the jump to digital – this is it. The S2's TTL strobe compatibility is a great feature – although some will argue it is not necessary with digital photography. No matter how you look at it, it's sure nice to have in a pinch. Also of major importance is the fact that digital photographers can finally shoot the equivalent of the 17-35 AFS lens underwater and this is a huge draw for this system. This first lens designed specifically for Nikon digital SLR's is excellent in every way and it works well behind Aquatica's 8" dome port.

Of course there are some areas that could use improvement, however, most of these are inherent in the camera and can't be fixed in the housing. The first of these is the viewfinder. The finder on the S2 is small'– it's basically the finder from the Nikon N80, but even SMALLER. That's because Fuji masked off part of the finder to account for the crop of the 1/1.5 sensor. Using the viewfinder for manual focus is "do-able" but not easy - the internal diopter helps a bit. Composing in autofocus is no problem – and it's easy to set the focus point using the buttons on the back of the housing to help the autofocus out even more.

The unit is a little too negatively buoyant in the water. Aquatica states that they will try to improve this on the production housings and I think they can do it. I decided to use buoyancy arm segments to help offset the weight of my strobes –

especially for better balance when shooting macro with the strobes out in front.

The tapped holes in one of my handles were not adequately spaced to mount my Ultralight ball adapter. Ultralight assured me that they haven't changed their adapter, so I'm hoping that Aquatica will increase the hole spacing on future production.

Aquatica has entered the digital market with both feet – and it appears that they are taking feedback from their users and improving each of the new housings as they come out. The S2 housing is certainly a winner and leaves very little to be desired. The construction is good, the versatility to use different lenses is there, and the unit is really a pleasure to use underwater. No matter how you look at it, it's a big unit, but the housing isn't any bigger than it needs to be.

James Wiseman
www.wetpixel.com

Light & Motion Tetra 5050 and ROC lighting control

American manufacturer Light & Motion are more associated with high quality video systems but they have recently entered the still photography market as demand for these products increases.

Their first cast aluminium housing was for a previous Olympus digital camera and they have used the same basic mould for their Olympus 5050 housing.

Elegant is not a word I would use to describe this housing but it does allow control over nearly all the cameras functions with the main exception being the on/off control but this is not a problem as half pressing the shutter release will 'wake up' the camera.

The camera fits snugly into the housing and is held firmly. All you have to do is slide the top connector into the hot shoe and plug the telephone style connector into the rear of the housing to activate the housings' impressive electronics.

The rear section of the housing is retained by two simply operated turnkey latches which close the housing securely with a piston O ring design.

The LCD screen is easily viewed through the large rear plexiglass port which also incorporates the display for the revolutionary ROC strobe controlling system.

I fully admit that my knowledge of electronics is basic to say the least and I can't offer you an explanation of how the ROC system works electronically - all I can say is that it does exactly what it says it will.

The Tetra 5050 housing has two Nikonos style flash connectors which you can't fail to see on the top of the housing. The ROC controller is set up by default to work with the Sea & Sea YS90DX, 90, 60 and 50 strobes but if you have other models, the ROC can easily be reset to work with most commonly available strobes from Ikelite and Nikon.

Once set up, the ROC can be used for TTL or Manual exposures. The manual system allows you to control the output of the strobe from the housing itself. If your first shot is incorrectly exposed you can adjust the strobe output for the next shot by pressing either the "+" or "-" buttons under the LCD screen. This will give you much more convenient control over your manual exposures.

In the "TTL" mode the electronics get the strobe to

emulate the camera's 'preflash' method of getting flash exposures correct. The first flash is read by the camera and used to make the second flash correct for a good exposure. If the light output was insufficient a red LED flashes on the display and alternates with the green ROC display LED. This works well in practice although the green LED is not particularly bright. I tested the system on land and it performed perfectly.

For those who would like to interchange strobes underwater there is a Wetlink connector option which replaces the standard flash connectors with waterproof versions. A special sync cord is available for use with the Wetlink. As this was a 'dry' review of the housing I was unable to put this capability to the test but I think the system would provide increased versatility although at a price.

For those wanting close up and wide angle options, the Tetra 5050 has you catered for. The standard front port is removeable and can be replaced with one which takes 67mm filter thread accessory lenses which are commonplace nowadays.

The Light & Motion Macro and Wide angle adaptors are similar (if not identical) to those made by Inon and other Japanese companies which have become so popular in recent years. The wide angle coverage is increased to 100° with the standard wide angle adaptor and a Pro version is available which pushes this to 130°.

Conclusion

The Light & Motion Tetra 5050 housing is a robust, if quirky, design and exploits the capability of the camera very well.

However, at $1500 it is considerably more expensive than the plastic housings from Japan which have revolutionised the underwater photography market in recent years. You do however get the revolutionary ROC system which is very impressive.

Peter Rowlands
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Olympus 5050 system

Anyone who has considered buying an entry level underwater camera recently cannot fail to have noticed the amazing moulded polycarbonate housings coming out of Japan, mainly for Olympus digital cameras but also some for Sony and Canon models.

The Olympus range have been particularly impressive, arriving on the market at the same time as the camera. This timing was unheard of traditionally as manufacturers had to wait for the camera and then design and produce the housing.

Olympus have joined forces with an independent Japanese housing manufacturer and they provide the finance for the moulding costs as well as working with them as the cameras begin their design and development. The result is a co-operation which all other housing manufacturers must envy and it has enabled Olympus to capture nearly all of this lucrative market.

The Olympus 5050 housing follows in their traditional footsteps with a high quality of design, construction and performance at an amazingly low price.

The camera slots snuggly into the housing , is held positively and there are push button and rotary controls for all the cameras functions. The ingenious design provides both piston and compression seals on the rear section of the housing which should prove virtually foolproof from flooding.

Being see-through, it is very easy to see the controls and the LCD screen area is shrouded with a rubber hood to improve viewing in bright conditions.

Also being see-through allows the internal flash to be used to light close up subjects. Traditionally this would have been contrary to conventional theories but in practice the built in flash works amazingly up to surprising distances. The result is

a very versatile, basic housing which will have beginners producing shots which will be the envy of many more seasoned underwater photographers.

The front port of the 5050 incorporates an aluminium ring with 67mm filter threads for attaching colour correcting filters and macro and wide angle lenses. This capability makes the 5050 even more versatile and there are very few shots which this camera could not take.

The one facility which the housing lacks is a connector to fire an external flash and, until recently, this lack has kept the housing in the "Beginners" category. However those clever people at Inon in Japan have come up with a very nice strobe which can be triggered by the internal flash on the camera. In fact you could even fire two or more strobes if you so desired. The stobes are triggered by a fibre optic cable which attaches to the flash diffuser on the housing. You have to make sure the camera is set to fire external slave flashes otherwise the system will be out of sync.

The Inon mounting arm and bracket are agricultural to say the least but once assembled everything functions and handles well. "Caddies" are available to attach to the arms so you can dive with standard, macro and wide angle lenses so there should not be a shot you can't take.

The advent of the strobe and accessory lenses elevates these housings to compete with other system cameras such as the Sea & Sea Motormarine 11 at a very similar price but with the added advantage of digital capability.

I used such a system in the Red Sea recently and was amazed by the simplicity and boggled by the capability. On one dive at Ras Mohamed for example I attached the wide angle lens for shots of batfish schools, removed it and used the standard lens for some shots of a turtle and single fish then switched to the macro lens for coral close ups. However I found the macro lens the least impressive as the camera already focuses very close and the extra power of the macro lens with its

The UN wide angle adaptor increases coverage to 100°. Inon also make a similar lens.

The 5050 system with UN wide angle on the camera, macro lens in the caddy and Inon Z220 slave strobe

(Above) Olympus 5050, Inon domed wide angle, Z220 slave strobe. 1/125th F8 Manual

(Right) Olympus 5050, UN wide angle, URPro filter. 1/200th F1.8. Aperture priority Auto. Putting the URPro filter between the housing and wide angle lens gives a very small amount of cut off.

(Below) A glass dome port cane be added to the Inon wide angle adaptor to give 130° coverage. It's not a cheap lens but it is very sharp. Also it is nose heavy in the water but I think of it as the Nikonos 15mm of the digital word.

(Above) Olympus 5050, standard lens, built in flash. 1/100th F2.8. Aperture priority Auto
(Below) Olympus 5050, UN Macro lens,
1/100th F8. Aperture priority Auto

minimal depth of field proved a bit frustrating.

Whilst the built in flash on the camera was ideal for reasonably close up shots, the addition of the Inon Z220 slave helped light wide angle scenes albeit with manual flash exposure, However in practice with all of the manual power settings available on the Z220, I found exposures extremely easy and very effective.

The advent of digital still cameras has revolutionised underwater photography. The availability of accessory lenses and filters and now the Z220 slave have elevated this humble and inexpensive housing into a truly system outfit.

It is capable of producing shots which will delight beginners and will have experienced underwater photographers thinking "do they really need all that expensive and heavy 35mm film camera equipment?" when this system is capable of producing similar, if not even better results.

Peter Rowlands, peter@uwpmag.com
dealer: www.oceanbrite.com

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Papua New Guinea

-The Perfect Location?

by Don Silcock

A friend of mine once defined the perfect dive trip location as a place you could get to in a day or less, and once their dive on world-class sites from a first-class live-aboard boat. For most Australians, and come to think of it other most residents of SE Asia, Papua New Guinea has to be a prime contender for the title of the "perfect location".

There are so many places to dive in PNG, and so much to see, that it pays to do your research and decide what kind of diving you really want to do, as each location offers so many different opportunities.

Milne Bay, at the southeastern tip of the main island of PNG is probably the best known of the diving areas and was pioneered by Bob Halstead, and his wife Dinah, on their boat MV Telita in the mid 1980's. Since then other areas such as Kimbe Bay and Rabaul on the island of New Britain, and Kavieng on New Ireland, have been pioneered by people like Max Benjamin at Walindi Plantation and Alan Raabe on MV FeBrina.

For me (a wannabee underwater photographer) on my third trip to PNG in as many years, I was looking for wide-angle reef scenes, World War II wrecks, large marine creatures and a liberal sprinkling of "macro critters". Milne Bay seemed to offer all this and more….

In theory you can leave Sydney in the morning, transit through Port Moresby, arrive onboard that evening and wake up to diving in Milne Bay the next morning. However flight connections always seem to work against me and the thought of arriving at Gurney Airport, Milne Bay's airport at the town of Alotao, eager and ready to dive but minus camera gear & dive equipment does not really appeal.

So for this trip I decided that the best option would be to split my diving between Loloata Island just outside of PNG's capital Port Moresby and Milne Bay onboard MV Chertan for 10 days.

Deacon's Reef, Milne Bay. Named by Bob Halstead after one of his guests in the early days of the Telita expeditions, Deacon's is a superb example of the reefs that Milne Bay has to offer. The guest was Kev Deacon the very accomplished Australian underwater photographer who owns Dive 2000 in Sydney and who has been coming to PNG for nearly 20 years. Kev is also the guy who helped me more than anybody else to use a camera underwater and therefore responsible for my current overdraft…
Nikon 801s & 20mm lens in Subal housing - manual. Twin Ikelite 225 strobes on manual. Provia 100 film - 1/60 @ f8

Loloata was a great opportunity to get my diving & photographic skills back in shape before hitting the exceptional diving in Milne Bay. It would also allow me to ensure that when I got on board Chertan I was doing so with all of my gear intact and ready to go…

Loloata

Loloata is an island resort run by Australian expatriates Dik Knight and Dave McDonald, located 10 minutes by boat from Bootless Bay just outside Port Moresby. Originally set up as a weekend retreat, to cater for the large expatriate community in Moresby, Loloata now caters mainly for divers like me transiting through the capital on their way to other parts of PNG.

Trust me on this - Port Moresby is not the sort of place for a quiet evening stroll to find a nice bar for a few quiet beers. Personal security is an issue, but not something to get paranoid about, it just means staying within the grounds of one of the two airport hotels, the Airways or Gateway and catching the first flight the next day. Loloata offers a great alternative to this, as you can literally be relaxing with a cold drink on the island about 45 minutes after clearing customs & immigration at the airport and waking up to an early morning dive the next day.

Onward flights to Milne Bay are generally in the afternoon, so spending a few days at Loloata combined with some careful flight & dive planning allows you to really maximize your dive time.

The diving at Loloata can be exceptional when the conditions are right, and vary

Nikon 801s & 20mm lens in Subal housing - manual. Twin Ikelite 225 strobes on manual. Provia 100 film - 1/60 @ f8

Nikon 801s & 105mm lens in Subal housing - manual. Sea & Sea 90 & 30 strobes on TTL. Velvia 50 film - 1/60 @ f16

from superb reefs – my favorites are Suzie's Bommy & Di's Delight, to wrecks like the 65m long tanker Pacific Gas & an A20 WW2 Havoc bomber to muck diving at Lion Island. All the diving is done from two purpose built 9m aluminium dive boats and is scheduled around two dives in the morning when the conditions are generally at their best, with a single dive available in the afternoon depending on the weather followed by a night dive on one of the more sheltered locations.

The whole operation is well run and the dive staff go out of their way to find those special critters, such as the Rhinopias (Lacy Scorpion Fish) that have made Loloata the PNG epicenter for this spectacular and very photogenic fish.

Giants @ Home cleaning station. In just 10m of water, 100m off the shore is the best dive I have ever done - if you like mantas (and I love them) this is the place for you. Not only can you dive with them on scuba, but they are not intimidated by either you or your bubbles and will come in so close that you wish you had invested in the full frame fish-eye….
Nikon 801s & 20mm lens in Subal housing - manual. Twin Ikelite 225 strobes on manual (1/4 power). Provia 100 film - 1/60 @ f11

Chertan

There is a framed photograph of Chertan displayed in the boat's dining area, it features a rainbow, which forms a magnificent backdrop to the boat at anchor in Milne Bay. Tom Campbell, the famous video producer, took the photograph and signed the words

"To MV Chertan, the best diving and dive operation – anywhere".

I wish I had the experience to agree or disagree with Tom Campbell, but I can tell you that I thoroughly enjoyed my 10 days on Chertan. I have been on bigger and more luxurious boats but I have never been on a boat where I felt so much at home. This is a real "diver's boat", or to be more accurate it is a real underwater photographer's boat and what makes it that way is the skipper & owner Rob Vanderloos, his wife Peo and the crew.

In a nutshell they go out of their way to show you the superb reefs & wonderful critters that make Milne Bay so special. Whether you want to dive with the manta rays at their cleaning station mantas@home or the myriad of wonderful macro critters that PNG "muck diving" is so well known for - Chertan's the boat for you!

Rob is an accomplished stills & video photographer, the author of Living Reefs Of The Indo-Pacific and has 17 years of experience diving in Milne Bay. He is also a true gentleman with a great sense of humor and an intuitive understanding of customer satisfaction.

On my to do list for this trip was to actually see, and then photograph, the holy grail of macro underwater photography - the pygmy seahorse. I explained to Rob how much time I had spent hypnotizing gorgonian fans vainly trying to capture these tiny but incredibly photogenic creatures. Rob's response was to make sure that I was able to put a'"done" tick next to the pygmies, even though it took three different locations to track them down. But it wasn't a case of here they are – see you back on the boat, he showed me how to get them in position and photograph them. No easy task at 20m with a strong current running and the pygmies seem to be able to move to the other side of the fan 2 nanoseconds before you press the shutter!

Onboard Chertan during my trip were Roger Steene & Scott Michael, two very accomplished underwater photographers. Roger, in particular, seems to have been everywhere at least

Located in 50m of water off the romantically named Boga Boga village, the wreck of the WW2 B17 Flying Fortress bomber is a great, if fairly short dive. There are many wrecks in Milne Bay but this has to be one of the best as it is in pretty good condition considering it was crashed landed in the sea over 50 years ago. For more background information check out the following link: http://www.divetheworld.com/Stories/BlackJack/INDEX.htm Nikon 801s & 20mm lens in Subal housing - manual. Provia 100 film pushed to 400 ASA - 1/60 @ f4

once and all the "hot-spots" many times over in his 40+ years of underwater photography. I asked Roger why he liked Milne Bay so much as he was doing two back-to-back trips that time and had done the same thing four months previously! His answer was that Milne Bay has almost everything you would want to see and that man (pointing to Rob Vanderloos) makes sure you get to see it!

I couldn't agree more….

Don Silcock

Raja Empat - the New Nirvana

by Will Postlethwaite

How do you choose the destination for your next dive trip? As a photographer there are a number of criteria you want to satisfy but in the end there is always a compromise to be made. However, if you after calm, clear water with abundant life including some of the most unusual and rare species to be found, amazing topography cradling the most pristine coral reefs in the world and not another diver in sight then there is a place that scores an easy 10/10, Raja Empat.

These islands of the 'Four Kings' are off the north west tip of West Papua and with the recent introduction of a daily flight link to Manado are the latest and hottest destination.

The lid really came off in April 2002 when a group of top marine biologists realeased an assessment of the coral reefs and fishes of the archipelago.

Gerald Allen recorded more fish species in one dive (283) than he had ever seen before and J.E.N Veron identified more coral species and in the best condition than anywhere else on the planet. Truly unsurpassed in every way.

A dive at the house reef off the island of Kri, where Gerry Allen logged his record, or at the nearby Chicken Reef is a experience like no other. Time and again your attention is grabbed by yet another new potential shot. You do not know where to point your lens next!

The number of fish is staggering at all the sites in the seas around these little islands but in the group called Fam two

Nikon F90 in a Subal housing, 20mm lens, 2 x Sea & Sea YS120 strobes on Full power, 1/60th@F8. Fuji Provia 100F.

submerged reefs, named Andy's Reef and Demelza's Delight by the crew of our boat, are washed by strong currents and give a daily spectacle that rivals that of the Sardine Run for fish density. Shooting up past the brilliant soft corals straining in the breeze the swaying dark mass of fish blots out the sun dropping you a stop or two! The coral cover is so dense that there is no place for a reef hook but a little finning is worth it for the show.

Also part of Fam are Melissa's Garden and Anita's Garden, plateau reefs around 10m deep that are dripping with

colour derived from fans, other soft corals, anemones, anthias and glassfish. Little bommies and islands provide stunning wide angle backdrops to the huge plates of hard coral, metres in diameter, beneath which hide Tassled Wobbegongs that occasionally come out and swim sinuously by. After one dive at Melissa's Garden the boat boy wondered how we had failed to spot the dolphins and Minke Whales that passed by the reef. You really need eyes in the back of your head on these reefs.

The islands are made of limestone karst from ancient coral and their jagged sharpness makes life hard for plants and animals alike. The population density is therefore very low and thus the usual human pressures have not been exerted here. Straddling the equator and forming their own natural barrier, storms and El Ninos also seem to have passed the area by so so that huge sea fans grow undamaged and literally touch the surface of the water. One weird consequence of this protective topography is Kaboei Passage. This small gap between two islands of the Waigeo group feeds into a large bay.

When the tide runs in and out the passage acts like a river and life clings to the banks fed by the flow. With flat calm water the opportunity abounds for bizarre split and through the surface shots showing untouched rainforest bending down to meet pristine coral reef reaching up while little archerfish eye insects on the branches above.

Travelling into Kaboei Bay is a muck divers dream where there is untold super macro for nudibranchs, frogfish and shrimp.

The abundance of sessile

Nikon F90 in a Subal housing, 105mm lens, Inon Quad flash, TTL, 1/80th@F16. Fuji Velvia.

Nikon F90 in a Subal housing, 20mm lens, 2 x Sea & Sea YS120 strobes, TTL, 1/80th, Auto. Fuji Provia 100F.

life on every reef affords plenty of hiding places so macro shots are everywhere. Wacky decorator crabs, cowries and gobies stare out from beneath branches and polyps. But the real macro sensation of Raja Ampat is the incredible number of pygmy seahorses. Not just pink and not just Hippocampus bargibanti but the newly named Hippocampus denise in every colour imaginable and many different types of fan, even one only 11m deep.

Your trip will also be punctuated by sailfish, marlin and manta leaping from the ocean right next to your boat. You can scour rafts of weed for Sargassum Frogfish and treck into the rainforest in search of the rarest Birds of Paradise and bizarre waterfalls. These, however, are just some of the unique and special aspects of this amazing archipelago. The waters are full of every type of pipefish, nudibranch and anemone fish imaginable and there are sites like those off Wai where you can dive with mantas while inspecting an untouched WW.II fighter plane with a pink pygmy seahorse under its wing. Further east there are more unlooted wrecks of cruisers and battleships from WWII.

For ten years this area has been a difficult region to visit and only one dive operator, Irian Diving, was based here but now there is a resident liveaboard, the Shakti, and a few other boats run short itineraries. The islands will never get crowded but when you get to dive reefs that have never been dived before or have had maybe less than a thousand divers ever to swim over them then you notice the potential for human damage. This is one of the planet's most special and unique places and Michael Aw is campaigning to get it registered as a protected area. We urge divers to visit this stunning dive destination and by doing so put money into the region to help the local population conserve what really is diving nirvana.

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Bamboo Nights

By Tony Wu

If bamboo sank, I thought, there's no way we'd be sitting here. What would we be doing instead? How would we stretch our legs? Where would we squat to go to the bathroom?! Odd as it might seem, this was the main thing on my mind. Bamboo.

I suppose that all things considered, my erstwhile fixation on this plant made reasonable sense given my circumstances.

I was at sea again - hungry, parched, exhausted and somewhat concerned that I had virtually no idea where I was.

Given the number of times I've placed myself in similar outlandish circumstances, you would think I'd have gotten used to this sort of thing by now, but a slight sense of anxiety never fails to set in once the sun begins to set, and the immediate distraction of trying to dodge UV radiation strong enough to fry eggs subsides.

So here I was, with five other guys, on a tiny bamboo platform in the middle of the sea, tethered tenuously by a lone rope to the ocean floor several hundred meters below.

Not as crazy as it seems

It would be natural to wonder how I ended up here and what I hoped to accomplish.

First, the platform isn't really as random a structure as it might first seem. In fact, there many of them in the waters around North Sulawesi.

Locally, people call them Fish Huts, which seems a perfectly adequate description to me. More 'sophisticated' people elsewhere refer to them as Fish Aggregating Devices ("FADs"). Whatever they're called, these bamboo platforms serve a single purpose: To attract as many fish as possible.

In deep, open water like this, the sheltered area under the Fish Hut provides refuge for little fish, pelagic larvae and other small creatures. And of course, anytime there's a congregation of small organisms, bigger fish eventually visit, thus attracting even more and bigger fish...eventually leading to the build-up of a substantial community of resident fish.

Which, in a round about way, was my reason for being here. I was hoping to find and photograph pelagic fish communities.

Sleeping With Bamboo

Water sloshed against the hollow bamboo logs, producing ghostly echoes, like contemplative rhythms resonating from a Zen monastery.

I lay my head in the narrow, distorted "V" shaped trench formed by two of the logs and contorted the rest of my body as best I could to conform to the hard curves of the bamboo. Centimeters below, the ocean rippled gently in the night breeze. Water sometimes sprayed onto my face, leaving a crusty film of half-dried brine to remind me of where I was.

I lay there half asleep, contemplating, of all things, bamboo.

I recalled that there are literally thousands of species of bamboo. It isn't considered commercial timber, like oak or teak, for instance, but that doesn't mean it's not valuable. Bamboo is flexible and pliable, which makes it easy to use, and adaptable to many circumstances. Yet it's strong, sturdy and reliable at the same time.

It doesn't get water-logged,

so you can make all sorts of useful things out of it (like the platform I was on), and it's not terribly susceptible to pests.

Bamboo wood is inexpensive, lasts a long time, and bears its given burden quietly, almost philosophically, like a tireless, uncomplaining friend.

The most striking thing to me about this under-appreciated plant, however, was how entirely uncomfortable it is to (try to) sleep on it in the middle of the ocean.

You Should've Come Last Week

The difficulty with getting images of pelagic fish is that you have to go where they are - the middle of the ocean.

On the whole, it would be much easier, and preferable in my view, if tuna, marlin, large sharks and the like visited shallow waters more often to pose for pictures, but alas, this doesn't seem to be at the top of their list of priorities. Which is why I was tagging along like a dorky kid on a Sunday outing with my friend Anceng in his fishing boat.

We had set out the day before from Bitung, the main port area in North Sulawesi on Anceng's five meter long fishing boat. Normally, the boat - really more a canoe stabilised with bamboo outriggers - carries two people and supplies.

On this trip, we had a total of five passengers, which made for a rather 'cozy' situation. The extra guys were there to babysit me and make sure I didn't do something embarrassing, like fall overboard.

So packed like proverbial sardines in a can, we headed out to search for big fish. As it turns out, we came across a lot of big stuff, which would've been absolutely terrific, if not for one minor issue: temporal displacement.

I kid you not. Every place we stopped, there were sightings of whale sharks, schools of yellowfin tuna, sailfish, pilot whales...you name it.

The one minor problem, of course, was that all the sightings were during the past week or two. Aiyah.

One helpful fishermen, trying desperately to assist, told me that a whaleshark had'"hung out" near his Fish Hut for at least two weeks.

He mistook the pained expression on my face for heat exhaustion, and kindly suggested I go for a quick swim to cool off.

What A Life

And swim I did, not so much to cool off, but more to 'cool off', in the sense of quenching my growing frustration.

As soon as I got in, though, I realised that missing the whaleshark didn't really matter.

It wasn't so much a sudden attitude adjustment on my part, but simply the fact that the visibility below the surface was horrible, just bloody awful. Couldn't see a whaleshark if it tapped me on the shoulder and stuck out its tongue.

So I finned back to the Fish Hut, flopped on like a large, uncoordinated fish, and decided to make the best of it.

While drying off on the 'sundeck', I struck up a conversation with the guy on the Fish Hut (via my friends' translation of course).

"How long have you been out here?"

"Two months."

"Wow, that's a long time. When are you going back?"

"In about four months".

I let that sink in for a moment.

I asked again, and he confirmed again, that typically, he and other fishermen stay for periods of six months on the Fish Huts.

Eegads! Six months? Alone. On a 3 x 8 meter bamboo platform in the middle of the ocean. A small hut, a wok, rice, water, cigarettes, local whiskey, kerosene and a short wave radio. I looked around; that's all he had.

Suddenly, it didn't seem so important that I wouldn't be getting any images of pelagic fish.

"So do you get any visitors, like family or friends?"

"No.", he replied very matter of factly. No wonder he looked delighted to see us.

"What happens when the seas are rough, like during storms and the typhoon season?"

"I stay inside the hut."

"Don't you get seasick?"

A wry smile showed me his cracked, yellowing teeth, or at least those that were left.

I sat silently, watching the sun descend to the horizon, trying to take in the magnitude of what he was saying.

Then he said,""Sometimes, the rope breaks.", in a rather understated manner.

'What rope?', I thought. "You mean the rope that holds the Fish Hut here?...!!!"

Another toothy grin, accompanied by a sparkle in his bloodshot eyes.

"When it happens, I stay inside and wait for the storm to pass. There are lots of boats, so I usually get picked up."

The part that hung in my mind was the word 'usually'.

"What if you don't?"

A very wide smile, -revealing the premature wrinkles and cracks in his complexion. "Sometimes I end up in the Philippines."

We were getting to know each other well enough by now that he knew I wanted to hear more.

"When that happens, I have to contact my employer and hope he sends money so I can come back."

So let me get this straight. He stays on the Fish Hut for six months at a time. He has nearly no visitors. He lives on rice, water and small fish you catch. "Why?", I thought.

As if on cue, he got up and started to fill and light four kerosene lamps.

I learned from my friends that all the guys on the Fish Huts have to keep bright kerosene lamps lit through the night. The light attracts small fish

and other marine organisms to the Fish Hut, which is the first step to aggregating large communities of fish.

When enough fish congregate, the fishermen call into home base on the radio. The Fish Hut owners then dispatch a boat which usually gets there during the night. Upon arrival, the boat surrounds the Fish Hut with a large net to trap the fish.

At dawn, they haul in the net, pass more rice and kerosene to the guy on the Fish Hut, and hurry back to sell the fish for export.

For his trouble, the guy on the Fish Hut gets Rp 300,000 per month (less than US$ 40) plus a small percentage of the sales proceeds.

What a life.

Flying For Fish?

I woke up, or rather fell rudely into consciousness, at first light. The first thing I had to do was crack every joint in my body and work out all the kinks in my neck from trying to be at one with the bamboo.

The night had been calm, and other than being sore, knotted up, hungry, thirsty, grimy, salty and

generally smelling of year-old fish guts, everything was just fine.

The guys had stayed up much of the night fishing and our host deep fried the catch of small fish for breakfast, -probably in the same oil he'd been using for the past two months.

Cold white rice, ground red chili, and salty fish fried a crispy dark brown in stale oil at 06:00 hours. Nothing ever tasted quite so good!

We chatted a bit more, then set off once again in search of large fish.

Anceng had been eager to show me his fishing prowess, and today was going to be the day. We hadn't been out long when we came across a pod of very active spinner dolphins which are often accompanied by schools of big fish, particularly tuna.

"Woohooooo!", Anceng and his mate cried out. My friends told me to hang on and watch closely.

One of the many intriguing things I came across tucked away in the nooks and crannies of the boat were a few kites...yes, the kind that you fly.

They were homemade, rather small, with spines made of (you guessed it) bamboo.

I thought it slightly strange to have these kites in the boat but I didn't think it would harm anything if the guys wanted to have a bit of fun while we were out for the serious business of photographing fish.

But when Anceng reached for one of the kites, I truly thought the equatorial heat had gone to his head.

What followed was something I was wholly unprepared for. As we kept pace with the dolphins, Anceng's mate launched a kite high into the air.

"How odd.", I thought.

Anceng then took control of the kite and as his mate steered, maneuvered the kite in front of the dolphins, which were perhaps half a kilometer away.

Get this...he then used the kite to skip a lure (which was tied to the kite) over the water in front of the dolphins!

One of the guys leaned over and told me to keep my eye on the bouncing bait. Easier said than done. First, the kite was really high up, literally a dot in the sky and the lure was attached by a long fishing line, which was impossible to see.

On the first pass, nothing happened. So we turned the boat around, and Anceng repositioned the kite for another try.

Several attempts later, it happened. A forty kilogram yellowfin tuna leapt two meters out of the water and struck. Two meters. No joke.

Forgetting that I was on a small boat, I jumped up to get a better look and nearly fell out (lucky the extra guys were around to grab me). The powerful tuna hit the water with an enormous splash and plunged into the abyss. The kite plummetted and struck the surface of the water with a nice, crisp "smack!".

The boat slowed. Anceng started to pull the tuna in. Anyone who's ever tried to pull even a small fish in with their bare hands will know how difficult it is. This sucker was well over forty kilograms but it didn't seem to bother Anceng at all. Within a few minutes, the fish was in the boat.

Bamboo Inspired Revelations

As it turns out, we were all so busy scurrying around the boat, rearranging items to make room for the tuna, that we lost sight of the dolphins and hence the school of fish.

The ocean is so amazingly big, it's deceptively easy to lose hundreds of dolphins and fish.

We cruised in silence for several more hours...Anceng fuming at losing the chance to catch more tuna; my friends desperately scanning the horizon for tell-tale splashes; and I, pondering over my recent experiences.

As the sun started its daily descent, we decided to head back home rather than spend another night out on the bamboo.

It's funny...I should've been cranky and disappointed. The visibility had been poor. I didn't get the images of pelagic fish I came for.

But when we reached the harbour and regrouped for our first real meal in days, I couldn't have been more content.

You see, I had learned something valuable.

As I left my friends after our final dinner together, I recalled once again the haunting sound of water striking the hollow bamboo of the Fish Hut platforms, the sound that permeated my dreams each night.

What was only noise before became a coded message from the sea, whispered to me during my nights on the Fish Huts.

Like so many thousands of species of bamboo, the numerous fishermen of North Sulawesi - the inshore fishermen, the robust, wandering fishermen like Anceng, the lone sentinels who spend months, sometimes years, in virtual solitary confinement on the Fish Huts, and the multitude of other fishermen I didn't have a chance to meet - all possess and share a common inner strength.

Like bamboo, they're not particularly glamorous, rich or sophisticated. They don't get the funding, attention or respect of, say, the large fishing fleets from

more advanced nations. They lead a hard life, filled with daily trials and tribulations most of us can't begin to fathom.

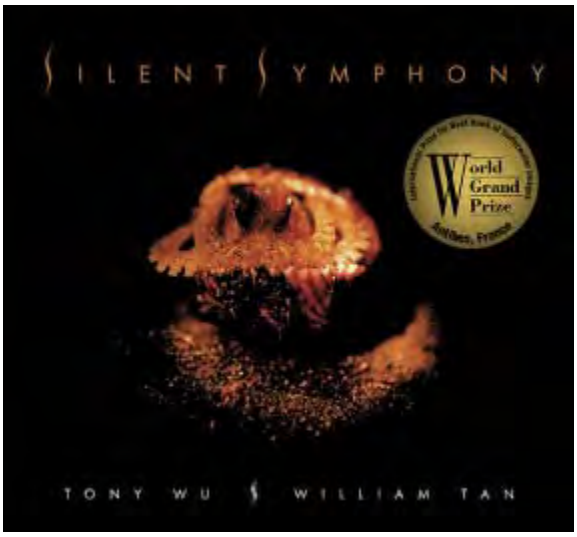
But also like bamboo, they are a strong, genuine lot who make the best of their circumstances. They endure whatever comes their way without complaint. They bear their burdens in silence. Storms, loneliness, back-breaking labour, getting swept to foreign lands...it's all in a day's work.

They are, in a sense, bamboo personified. From the Fish Hut platforms to outriggers for their boats and the spines of their kites, the fishermen's lives depend upon bamboo. At the same time, their gentle nature and enduring demeanor reflect the unique character and resilience of this precious, if not underrated, plant.

In North Sulawesi, the fishermen are the framework of society. And by virtue of the many fish they catch and export, many more of us well beyond the immediate area depend upon these strong, silent men in some way. They, like bamboo, are truly unsung heroes.

This was the message from the sea during my sleepless, bamboo nights.

Tony Wu
www.tony-wu.com
www.silent-symphony.com



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Is Digital the Death of the Double Exposure?

By Mark Webster

If we discuss manipulated images today many photographers would now refer to digital images which have been improved or changed dramatically in Photoshop or some other wizard software. The power and scope of digital software is still in its infancy but picture manipulation is now within the grasp of anybody who is reasonably competent with a computer. Stunning pictures can be produced combining two or more images with a plethora of special effects, but I find that I frequently ask myself if it is not too easy now and maybe it is possible to make the proverbial silk purse from one or more pigs ears! It was not all that long ago that the underwater photography world was stunned by the first double exposure, which of course is a real time in camera effect on film, which soon became very popular and 'de rigeur' for international photosub competitions.

Those of us of a 'certain age' will remember sitting gobsmacked in judgement of the 1986 BSoUP (British Society of Underwater Photographers) 'Splash In' when Peter Scoones swept the board with a double exposure of a cup coral and reef in the background. Most of us in the audience knew immediately that there was something very unusual in the technique employed in this shot, but none of us could be sure until Peter very generously revealed his methods in, (coincidentally), the first issue of Underwater Photography Magazine (the printed predecessor to this now web based publication). Double exposure was a technique long employed in surface photography, and Peter may not have been the first to use it underwater, but his shot was stunning and goaded all of us to follow his example.

The same effect can now be produced quite easily in Photoshop in the comfort of your own home, with the luxury of time to perfect the blend of one or more shots and the choice of many images to produce the finished picture. But, whilst the end result is similar, for me the exercise is all too easy. Luddite I may be, but there is surely a far greater sense of achievement in planning and executing a successful double exposure in camera than from cutting and pasting from a variety of images on your hard disk?

Not all of our readers will know exactly where I am coming from, so for background perhaps I should recap on just how a double exposure is achieved using a film camera.

Even tropical locations like the Red Sea offer excellent opportunities to practice this technique. However, as conditions are generally much clearer and brighter you have to watch the exposure differential across the frame when you include the sun in the background exposure. Using a boat on the surface can help to block most of the direct sunlight. Nikon F801, Subal housing, 60mm micro and 16mm fish eye, Sea & Sea YS50, Fujichrome Velvia, f16 @ 1/250 and f8 @ 1/125.

In essence you will be running the same film through your camera twice (or more) and selectively exposing an area of the film frame each time. In order to do this you must know the point at which the film started and you must be sure that each film frame is in register, i.e. subsequent exposures do not overlap into the next frame. This is easily achieved with a camera using mechanically actuated sprocket drive such as the Nikonos III, IVa, and V, or a manual SLR, e.g.

Flash and snoot - You will need to light the foreground or macro subject very selectively to leave the remainder of the frame underexposed. Snoots can be constructed from a variety of odds and ends - this one comprises part of a watering can rose and a piece of drainpipe!

Nikon F series, Pentax LX, Canon F1 etc. Some auto focus cameras are suitable for this whilst with others you can make use of the multiple exposure programme, but more of this later.

How it's done

So, step by step, this is what you do with a manual camera:

* Open the camera back and watch the sprocket drive whilst you stroke the wind on lever and fire the shutter several times.
* Now mark one of the sprocket teeth (top dead centre is best) and the camera body adjacent to it. White paint, Tippex or a coloured permanent marker is suitable.
* Stroke the shutter several times again and watch that the two marks repeatedly line up. Some cameras will line up on each stroke of the wind on lever, others will be every second or third turn dependant on the drive mechanics.
* Next load your film and once secured on the take up spool mark your film with a vertical line where the marked sprocket tooth engages the sprocket hole in the film leader. Use an indelible pen for this.
* Now you can make your first series of exposures. Keep a careful note of frame numbers and subject positions.
* You then rewind the film, taking care to leave the leader out, and reload following the same procedure. The film will now be registered in exactly the same position for the second or subsequent series of exposures.

Auto focus Cameras:

Taking a double exposure with an auto focus camera presents a little more of a challenge, dependant on which model/housing combination you have. Because the film transport is motor driven and not manually advanced it is more difficult to re-register the film. The camera still 'counts' the sprockets in order to advance the film precisely frame by frame, but the difficulty is in predicting where the counting will commence when you reload the film. My experience with Nikon cameras indicates that the important requirement is to keep the tension on the film/transport system and it will re-register. I am sure that there are a number of options, but here are three procedure which do work:

1) Fitting a small isolation switch to the camera battery pack - this allows you to stop the rewind process when the film counter shows zero, or at any other point. You can then crack the camera back open - without opening it completely - to zero the counter. The film remains attached to the take up spool and tension is retained. When you 're-load' the film it remains in register as it advances to frame 1.

2) The second method entails deceiving the camera to make it think that the film has rewound completely. To do this you cut off the film tail and replace it with a piece of tape, which runs to the take up spool. When you rewind the film it stops as soon as the last sprocket leaves the take up spool and the counter zeros. You can now advance the film again to frame 1 without opening the back whilst the tension is retained and the film remains in register.

3) The third method relies on the fact that the film transport system will re-register reliably after a set number of 'film sequences'. For this method you will need a sacrificial film and you can mark a sprocket. Running the film through the camera between 4-6 times you will find that the marked sprocket will return to a set position after a certain number of sequences. Check this a number of times to ensure that you have the correct number of sequences and then you can use your sacrificial film to re-register the transport system before reloading the film.

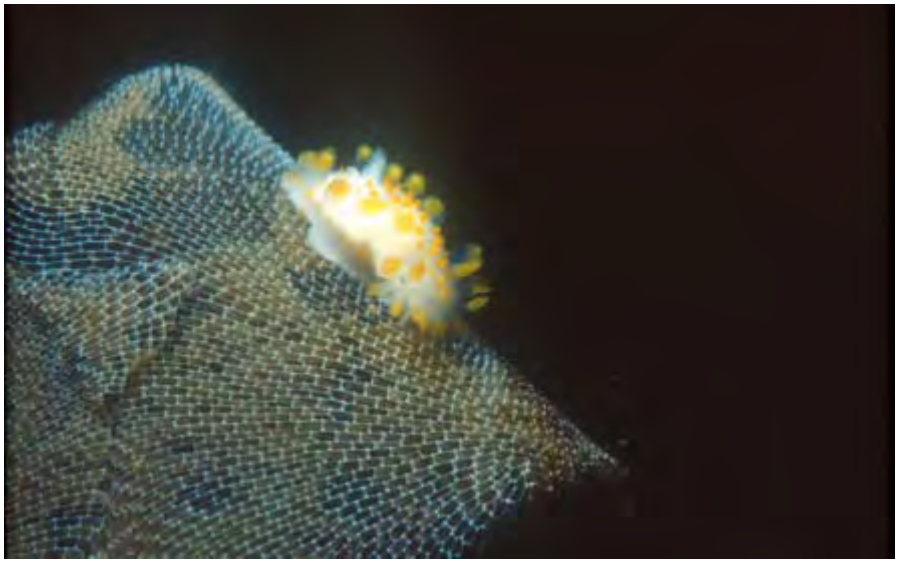
There are no doubt many other methods to fool the camera and ensure re-registration and it is a question of having the patience to play with your camera to learn its foibles. For many it may seem like too much trouble, so for you the introduction

of high quality zoom lenses may be the way to go if your housing gives you control over the multiple exposure control of your camera. The 17mm or 18mm-35mm zooms are a good choice, or you could try a 28-72mm or similar range, however the wide angle end of these standard zooms may not be wide enough. For most dome set ups a diopter is required to focus on the virtual image which has the added benefit of extreme close focussing at the long (35mm) end of the zoom. This allows you to focus on small subjects in part of the frame, light it selectively, and then zoom out to the wide end for the second exposure. By choosing your subjects carefully you can produce some very effective results, but you must keep your wits about you and remember to keep selecting the number of exposures you require with each frame and also remember which end of the zoom lens you should be using !

Composition:

The classic double exposure is a "forced perspective" image which combines a macro foreground shot with a sweeping wide angle background, thus giving a feeling of depth to the photograph and the illusion of marvellous visibility. This type of shot is especially useful in UK waters where on the whole visibility is rarely stunning!

To achieve this type of shot you will need both a macro system and a wide angle lens for your camera. Combining the two halves of the image without showing the "join" is the tricky part and as with all aspects of underwater photography requires patience, practice, a few rolls of film and usually a little disappointment on the way.

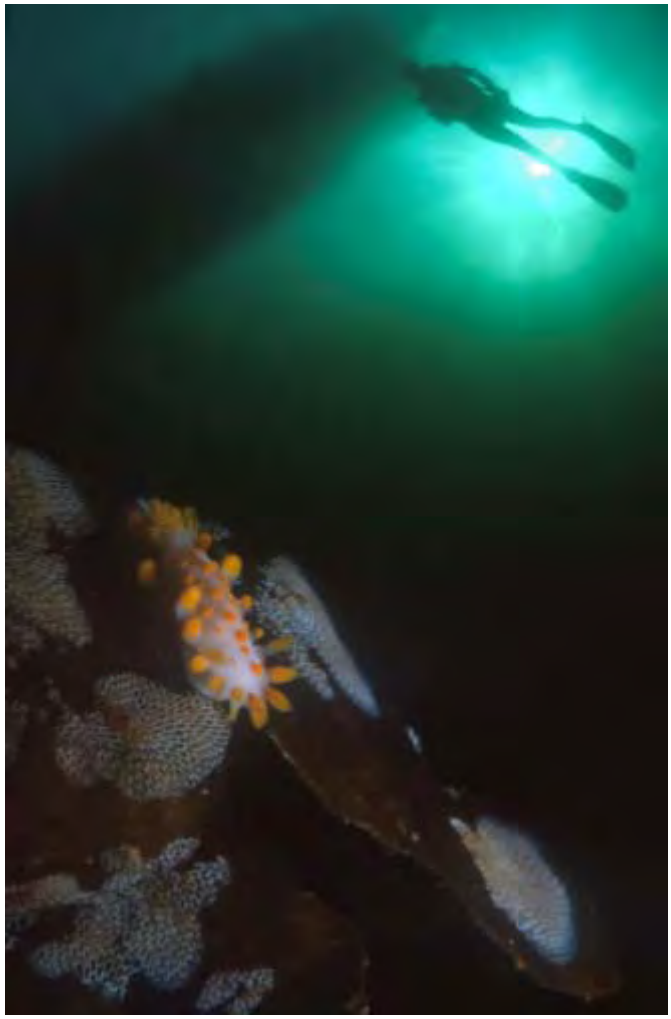


This series of four shots shows how a double exposure can create a dramatic difference to a commonplace subject, in this case a small nudibranch which are abundant in the spring and summer months in UK waters found feeding on bryozoans. Nikon F801, Subal housing, 60mm micro, Sea & Sea YS50, Fujichrome Velvia, f16 @ 1/125.

This shot in the series was also taken in Norway during the 1998 CMAS World Championships. The horizontal composition changes the feel of the image significantly. The combination of the nudibranch and diver's face represents an image you can see in your mind's eye, but is impossible to record with a single lens. Both elements of this composition have to be selectively lit with flash - a larger snoot has been used on the diver 'half' of the frame. Nikon F801, Subal housing, 60mm micro and 20mm, Sea & Sea YS50 and YS120, Fujichrome Velvia, f16 @ 1/250 and f16 @ 1/250.

Photographers using housed SLR's do have a distinct advantage with this technique as they are able to directly view the picture area and place subjects accurately. However, excellent results are also achievable with the Nikonos system and the basic exposure techniques are the same for both options.

The same species on kelp but this time with the addition of a sunburst on the second exposure. The vertical composition, strong diagonal line and apparent forced perspective gives the shot much greater impact and the illusion of good visibility and huge depth of field. Nikon F90X, Subal housing, 60mm micro and 16mm fish eye, Sea & Sea YS50, Fujichrome Velvia, f16 @ 1/250 and f11 @ 1/60.

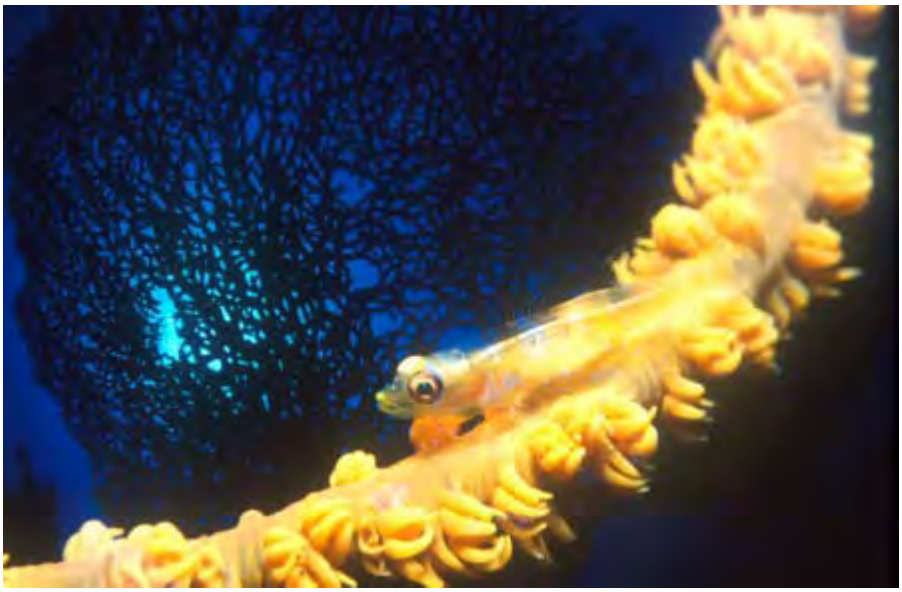


A variation of the same composition to include a diver and boat on the surface with the sunburst. Including the diver in the distance increases the apparent depth of field and illusion of good visibility. This shot was taken in Norway during the 1998 CMAS World Championships when visibility was anything but perfect. Nikon F801, Subal housing, 60mm micro and 16mm fish eye, Sea & Sea YS50, Fujichrome Velvia, f16 @ 1/250 and f8 @ 1/30.

Below is a guide to the foreground and background exposures which is not necessarily gospel as most photographers develop their own variations.

Foreground Exposures:

The easiest way to start is to pick a subject which will fill no more than half the bottom of the frame at a magnification of say 1:3, a cup coral or anemone is ideal. You must now be able to light this subject selectively with your flash gun so that the rest of the frame is unexposed. This is best done by making a "snoot" for your flash which will direct a cone of light at the subject. Snoot size can depend on subject size but I find that between 1/2" and 1" is ideal for most applications. This will obviously affect the power output of the flash generally by a couple of stops - you will find TTL generally does not work. If your camera has the option of fast synchronisation speeds (e.g. 250th of a second) then use it as this will help keep the background dark. Now make a series of exposures for the foreground bracketing with both aperture and flash distance and vary the position of the flash. Keep a note of your positions and apertures for future reference. Do not be afraid to use the whole film on this, perhaps choosing one or two other foreground subjects, as you will find initially that the results are unpredictable. On completion return to the real world and rewind your film.



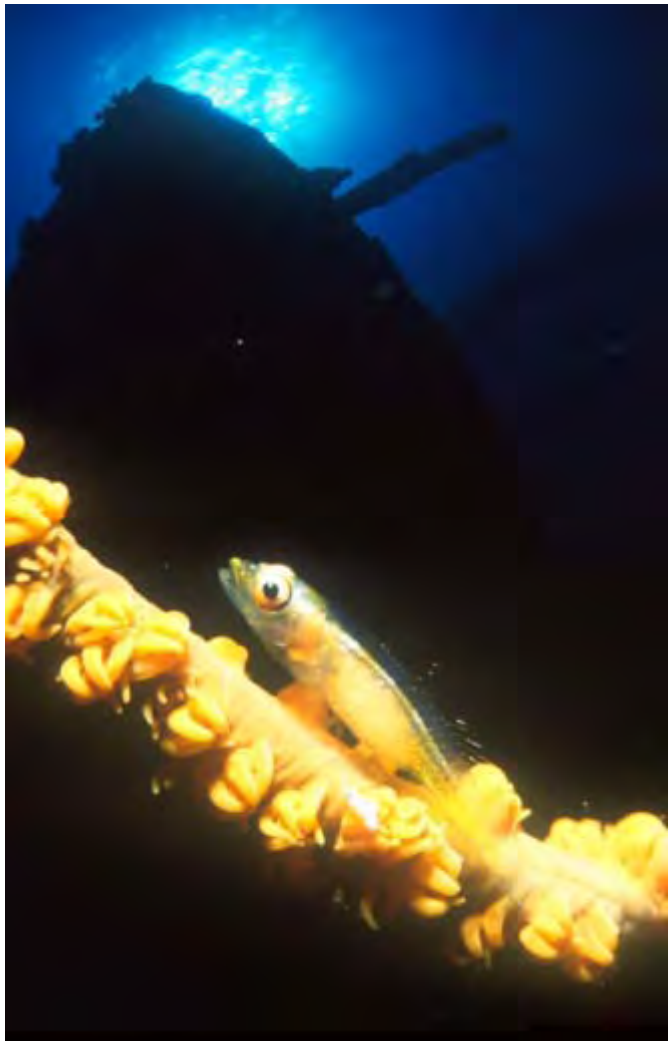
Diving in tropical waters presents a huge variety of macro subjects for the foreground and all sorts of alternatives for the background. In this case the format is horizontal and a table coral has been used to shield the sun and provide a dark silhouette background which contrasts well with the whip coral and goby. Nikon F801, Subal housing, 60mm micro and 16mm fish eye, Sea & Sea YS50, Elitechrome 100, f16 @ 1/250 and f16 @ 1/60.

Background Exposures:

Having re-registered your film fit your wide angle lens, which really needs to be 20mm or wider for the most pleasing results. Remove your flash gun and return to the water. Remember the orientation of your original macro shots, which leaves you the top half of the frame to fill with the wide angle view. The trick now is to ensure that you do not re-expose the bottom half of the frame. The best way to approach this is to find an area of overhanging reef or kelp which will "cover" the bottom half of the frame. You can then meter the two halves of the frame and ensure that there is at least a 2-3 stop difference between them, i.e. you are underexposing the bottom half of the frame. Now you can make the series of background exposures including perhaps a diver, the sun or a passing fish shoal. Vary the composition and move around to find varying overhangs and backgrounds. Again keep a note of what you do.

Your first attempts with this technique may not be a resounding success, but perseverance will bring repeatable results and some very pleasing images. It is sometimes helpful to sketch up an idea before you go into the water and also keep a note of subject positions, lighting angles and frame numbers on a scratch board. Once you have mastered the basics you can begin to experiment with horizontal compositions, three or four exposures on a frame and variations in lighting techniques. The only limits are your patience and imagination!

This style of creative photography does not appeal to all, indeed some regard it as not being



This is the same fish and coral from the previous shot. The format has been changed to vertical and the background changed to the bows of a shipwreck. Which makes the most effective composition is down to personal taste. Nikon F801, Subal housing, 60mm micro and 16mm fish eye, Sea & Sea YS50, Elitechrome 100, f16 @ 1/250 and f16 @ 1/60.

true underwater photography as it often does not include the patient stalking of wildlife but more often consists of pre-planned set piece shots. But you should not immediately dismiss these techniques even if you feel that your interests lie with "straight" photography. Experimenting with this offbeat technique will develop your compositional skills and teach you a lot about controlling light and assessing correct exposure.

So, is digital manipulation going to kill off the double exposure? I for one hope not - it is great fun to experiment with these techniques, stretch yourself a little mentally and perhaps make something more from a potentially uninspiring dive site. But if the prospect of all this technical manoeuvring in and out of the water is just too much, then at least save some of your less than perfect shots for those quiet evenings in with Photoshop!

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Mark Webster

Mark Webster is the author of 'The Art and Technique of Underwater Photography' (published by Fountain Press) and Diving and Snorkeling Belize (Lonely Planet). He hosts regular photography workshops overseas - dates for 2004 include Bonaire (January) and the Red Sea (June and October).

Visit Mark's website www.photec.co.uk for further information. Please contact Oonasdivers for full tour details and bookings: www.oonasdivers.com

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The Inon T Flash. From Ocean Optics.

See UWP 11 for Mark Webster's in depth review www.uwpmag.com

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Filter fulfilment 2

By Alexander Mustard

Back in UWP 11 Peter Rowlands wrote "Filter Fulfilment" an article encouraging us to use coloured filters as the alternative approach to using flash to get colourful underwater images. My aim in this follow up article is not to convince you that this technique works with before and after shots; PR's article convinced me! Here, I plan to go into a bit more detail and pass on some of my ideas about how to get the best out of this technique of combining coloured filters with a digital camera.

Colour compensating filters have been used in underwater still photography for many decades. Seek out a 1960s text and you will find lots of filter facts, but reading between the lines and it appears that filters were popular only because flash photography was, at best, temperamental and at worst, darn dangerous! Even the most experienced users of filters would struggle to get the exact colours they wanted - colours that could be so easily achieved with flash. Once electronic strobes got through their teething problems the popularity of filters waned.

Digital cameras make getting colourful shots without flash very simple. Nikon D100, Subal housing. 16mm lens. 40CC Red filter. 1/100th @ f9.5

The theory

A colour compensating (CC) filter is used underwater to attenuate undesired wavelengths (read colours) and to transmit desired wavelengths of light to counteract the filtering effect of the water. Correct filtration balances the full spectrum of wavelengths, the wavelengths we would usually supply with our flashgun. It is important to remember that filters, either in the form of seawater or the one on your lens, work by subtraction, they can only take away unwanted wavelengths. So in filter photography we are always reducing the light that is available.

As an example, in clear water red, yellow and orange light is attenuated and the resulting spectrum is biased to cyan/blue. To counteract this we must add a red filter that will get rid of all that unwanted cyan and blue and flatten the spectrum (although at a much lower intensity that the original light). The reason this technique is never particularly effective on film is that the exact filter required to "correct" the spectrum depends on what light has been removed by the water,

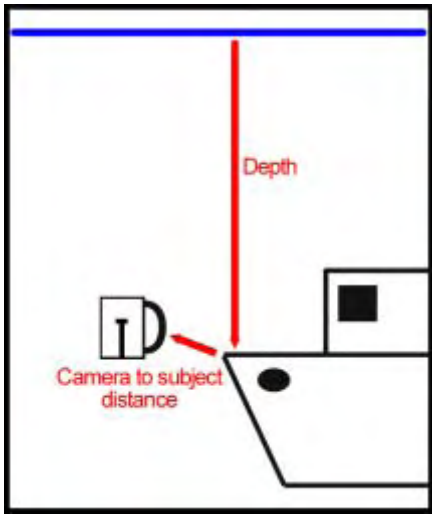


Figure 1: The right path: the important light path to determine the strength of filter required is the one from the surface to the subject and on to the camera.

which is mainly determined by the distance the light has travelled through the water. This crucial "light path" distance is measured from the surface to the subject and on to the camera (see

Figure 1).

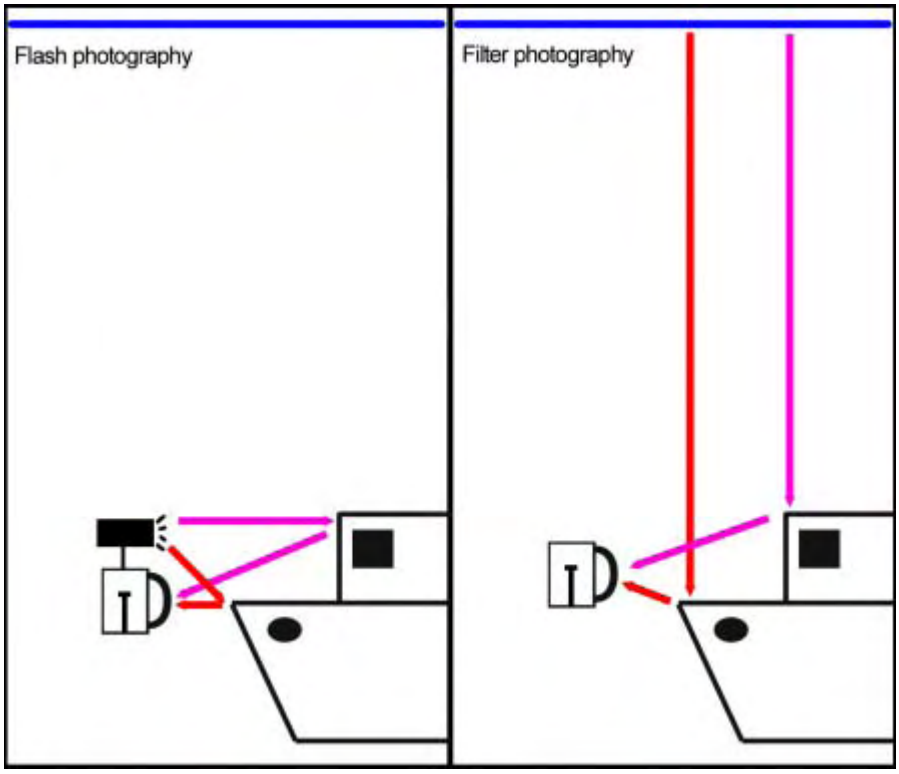
Thankfully photographers have already determined empirical equations to guide us to the right filter. For example, in tropical (cyan) water we need 12CC units of red filter for every meter of light path. So at a depth of 3 m, 0.3 m away from the subject, we need a 40CC red filter (12 x 3.). The exact filtering requirements will depend on your local conditions, but I would recommend this as a good starting point.

As I'm sure you have already realised this means that a particular filter will only work at a specific light path length (or depth). And this lack of flexibility is really the big weakness of the technique when used with a film camera. Furthermore, a film system cannot react to other factors that change the colour temperature of the light, such as changes in water quality or the light above the water (clouds, sun angle etc).

However, with a digital camera we can easily tilt the playing field back in our favour. Digital cameras have adjustable white balance designed to counteract changes in colour temperature of the light. This factor adds the flexibility to filter photography that makes this technique a real alternative approach to colour photography. In Filter Fulfilment 1 PR shows convincing before and after shots taken with a URPRO filter from a depth of a few metres to close to 20m.

The toys

Rather unusually in the world of underwater photography this is a technique that doesn't require you to part with lots of the folding stuff..



Relative values: in available light photography we get better colour penetration into our pictures because the relative light path lengths of the light are much more similar between the foreground and background than in flash photography

Instead it is more a case of leaving behind many of your normal toys. So cast aside your strobes, your strobe arms and your synch cords! The only new purchase required is a filter.

As a starting point I would recommend using a CC gel filter (such as a Kodak Wratten filter) that can be cut to fit on the front or rear of your favourite wide angle lens. Established wisdom suggests using a magenta filter in green and deep water and a red filter in shallow cyan/blue water. Then use 12CC units per meter of light path to work out what strength of filter you want. But since the use of filters in digital still photography is only just getting going it is really worth experimenting to find the best setup for your camera, local conditions and usual diving depth. Being able to see your images after every dive makes it easy and quick to find which filter works best.

As an alternative to CC gels you could try fluorescence warming filters or the URPRO filter range. I have found the knowledge and experience of the users of the wetpixel.com forum a great source of information in these matters, and using this internet group I have even been able to bounce ideas off the forum while out in the field!

White balance and RAW files

White balance is simply an image processing control on a digital camera that adjusts the colours of the image to compensate for changes in the colour temperature of the light illuminating the subject. When white balance is set to AUTO, the camera measures the colour temperature of the illumination and alters the colours of the final

image as it processes the data from the CCD. And most of the time this works very well.

In underwater photography (with or without flash), if we are too far away from our subject the resulting image comes out too blue. AUTO white balance can detect this blue shift in colour temperature and removes it in the processing. That is why we can get away with shooting a digital cameras from further away than a film camera. And why digital cameras make novice photographers happy, who have not yet learned to get close. I have become side tracked!

I suggest starting filter photography by using AUTO white balance and shooting RAW format files. When using the RAW file format the white balance settings do not change the data recorded by the camera's CCD, which is what the RAW file is. Do note, however, that the preview image shown on the LCD screen will have the white balance applied to it. RAW files allow us to adjust the white balance after the dive, on the computer, if we are not happy with the result. Changes made to the colour temperature and exposure at the RAW conversion stage are much less detrimental to image quality than similar changes would be made to a bitmap file in Photoshop. This is because we are modifying the original data captured by the sensor before the bitmap is created. RAW conversion software, such as Adobe Photoshop Camera Raw, provides this post production control. Many photographers prefer to shoot on AUTO and fine tune white balance in this way, while not under the influence of compressed air.

I prefer a slightly different approach. I take a plastic grey card underwater with me to determine my own white balance setting for the shooting conditions. The way I do this is to show my camera the grey card - my camera already knows what a grey card should look like and calculates a white balance by comparing what it sees to what it expects. I then use that setting for my subsequent shots. Other cameras know lots about white cards, it just depends on how they have been programmed. A manually calibrated white balance will only work at one depth, so if I am moving up or down the water column over a few meters, and thus changing

Filters are a great way of taking colourful pictures in turbid water, which would produce lots of backscatter under strobe lighting. Nikon D100, Subal housing. 16mm lens. 40CC Red filter. 1/320th @ f5.6

Colour penetration away from the camera into the image is much better in filter than flash lit shots. Nikon D100, Subal housing. 16mm lens. 40CC Red filter. 1/40th @ f6.7

the length of the light path, I have to recalibrate the white balance. I keep my grey card stuffed under my BC's cummerbund, and the calibration takes about 10 seconds. If I am only moving up or down less than a meter I tend not to bother recalibrating the white balance, instead relying on adjusting the colours in the RAW conversion software.

So if RAW conversion software or in situ white balance calibration provides all this control over the colour temperature of our images, with only small loses in image quality, can we get away without filters altogether? No, not really. Although we can shift colour temperature in the conversion the more colours we invent in the computer the more we reduce our image quality. It is much better to get the colour temperature of the light as good as we can before it hits the sensor (using a filter) and then use white balance for fine tuning (either by calibrating in the water or in the computer). That said, if you have the wrong filter attached to your lens and mating whale sharks swim past - take the picture and worry about white balance later!

Lighting

Finally we can get on to some photography. Lighting available light shots underwater is very similar to lighting available light shots on land, and not at all like lighting normal wide angle underwater photography! Usually when we shoot wide angle underwater we shoot upwards to increase the contrast of the subject with the background. The subject is often then in silhouette, so we use flash to fill the shadow and provide light. We use aperture and flash power to control the flash exposure and balance it against the ambient light of the background which we control with aperture and shutter speed.

Filters let us shoot large subjects in colour that we could never light with flash. Nikon D100, Subal housing. 16mm lens. 40CC Red filter. 1/100th @ f6.7

When taking available light filter shots the only light we have available to use is sunlight. It is therefore important that we position ourselves carefully to make the most of this light. In the same way as we would on land, we want this light coming over our shoulder and illuminating the scene we want to photograph. Shadows can be strong in tropical sunlight and large black areas in the images can look unsightly, so it is worth studying carefully how our subject is illuminated before deciding how to frame it. A slightly downward camera angle can help to reduce shadows, because sunlight usually comes down from above! Another tip is to shoot above white sand which is a good source of upwelled light to help fill any shadows. The final caveat is to remember to check the viewfinder or LCD screen for our own shadow! With an ultra-wide lens and the sun behind us, this is an easy trap to fall into. I continue to ruin many shots by including my shadow!

As I explained above, in flash photography we control foreground and background exposures pretty much independently. Using only available light we cannot do this because we have only one light source. The best method I have found for controlling background exposures is to alter the camera angle. A downward angle picks up the dark blues of deep water that is invariably darker than your main subject, and an upward angle lightens the background giving a cyan/ turquoise background.

The final lighting consideration is depth, because this is primarily a shallow water technique, that works best in the top 10 m. As we go deeper not only is more light scattered, but also the filtering effect of the water becomes stronger, which in turn, means we need a

stronger filter on the camera to remove all that blue. All this filter subtraction leaves very little light for photography! Digital cameras try to help by adding more red to the image, which works for a while but these digital lies will, sooner or later, ruin the shot.

Depth of the colour field

In my opinion the penetration of colour away from the camera in filter photography is its main advantage over flash photography. A filter image has good colours extending much further into the image than a flash lit shot. The reason for this becomes clear when we think about the relative light path lengths:

As an example (see Figure 2) think about photographing a small wreck in 5m of water. The camera is 0.5 m from the front of the wreck and 1.5 m from the bridge. With a filter the light path is 5.5 m for the bow and 6.5 m for the bridge. So the light path for the bridge is only 0.2 times longer than for the bow and should still show good colours. With flash the light path for colour is flash to subject and back to the camera. So for the bow it is 1 m and for the bridge it is 3 m. Therefore the light path is 3 times longer and little colour will be seen on the bridge.

This increased colour depth means that with filters we can take colour images we just could not get with flash. In addition to the creative potential this also makes filter photography an excellent survey tool for photographing large areas, even in low viz. We can exaggerate this effect further still if we chose subjects that slope upwards away from us. Looking again at the wreck in Figure 2 the bridge is actually shallower than the bow, which shortens the light path reducing the difference between light path lengths, If the subject matter slopes up at 45 degrees the colour will stay consistent until it reaches the surface because the light path will remain the same as the foreground (as camera to subject increases, so surface to subject decreases).

Conclusion

Filters allow us to cast off the excess baggage of flash photography. The pitfalls of flash photography have claimed many of my images that looked like winners through the viewfinder! Certainly it is an attractive prospect to be free of the problems of TTL, flash aiming, backscatter,

Filters are also suitable for long exposures because colour remains constant throughout the exposure, unlike rear curtain flash techniques. This shot tries to capture the feeling of following a buddy around! Nikon D100, Subal housing. 16mm lens. 40CC Red filter. 1/4th @ f22

Guide Numbers, synch cords, synch speeds etc! But the real promise of this technique is the very different lighting that can be achieved in our shots, allowing the digital photographer to capture shots that we just could not get on a slide.

Alexander Mustard

Alex will be talking about some of the advantages of digital cameras for underwater photography at this year's Visions in the Sea Conference in London later this year. For further details contact Ocean Optics optics@oceanoptics.co.uk

Nikon Coolpix 5000 and UK Germany Housing. Only the Price is Understated.

It isn't easy to overstate the attraction of the Coolpix 5000 and UK Germany housing outfit Ocean Optics have put together. For the digital enthusiast it's one of the most versatile systems available at any price.

The Nikon Coolpix 5000 is one of the best specified digital cameras around. 5 Megapixels with recording to TIFF for high quality enlargements you can be proud of. Automated features to get you shooting successfully from the get go with full manual overrides for creative control when you need it, so you won't be limited as your experience grows. It even shoots a minutes video. Superb 28 - 85mm (35mm equivalent) zoom range with built in macro focusing to 2cm for stunning close ups. Optional 19 to 35mm wide angle zoom that's the perfect general purpose underwater lens. There's even a full frame or circular fisheye for sweeping undersea vistas and dramatic wreck portfolios.

UK Germany's housing is custom built to take full advantage of the 5000s capabilities. It's built from sturdy aluminium for a long working life under tough conditions. Yet it is more compact and lighter than many plastic competitors. So its great for overseas trips - camera, housing and T Flash weigh under 5kg, so it can travel in your hand luggage.

Controls are placed to maximise ease of use. So no fumbling and no missed shots. A Nikonos flash socket is standard, so you can choose from the widest possible range of strobes. Interchangeable flat and dome ports for standard and wide angle lenses, with the option of adding the Nexus wet lens for super-macro photography.

And best of all, our special package deal lets you shoot like a pro for an amateur price.

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Back to Basics

Close up photography - Why is it so easy?

by Peter Rowlands

Close ups are by far the simplest and most effective form of underwater photography.

As discussed in the first article on Basics, the three main variables you have to get right for a technically correct photograph are:

1. Focus
2. Shutter speed
3. Aperture

Close ups are so simple because, in most cases, you can preset and forget the first two of these variables and the third doesn't have to be altered too much. If you've got a TTL camera and flash system, you don't even have to worry about the third!

Electronic flash is essential to restore the colour and detail in your subject and, in most situations, provides the total light for the exposure so no allowance needs to be made for available light. For simplicity's sake, the flash position should be kept fixed to simplify exposures.

The first two 'variables' which can be preset are:

1. Shutter speed

The maximum shutter speed you can use is governed by the electronic flash and, on the Nikonos 1Va and V, it is 1/90th sec but because the flash is providing all of the light for the exposure, the shutter speed is almost irrelevant, even with cameras which can be used with a higher shutter speed.

Preset the shutter speed to the fastest setting your camera will allow for electronic flash and forget it. Using a slower shutter speed will make virtually no difference to the exposure.

2. Focus

With Nikonos close up equipment such as close up lenses or extension tubes, the focus is preset to make sure you are in focus where the frames indicate. Altering the focus will in fact make little difference to the focus position but don't complicate things. Preset the focus according to the manufacturer's instructions and forget it.

With reflex cameras you will be able to see the exact point of focus so you will not have to worry about correct focus.

3. Aperture

Because the flash is providing all of the light for the exposure, the only variable to get right is the aperture.

If you are using a TTL camera and flash system such as the Nikonos V or MotorMarine II, the internal electronics will even adjust the light output for you - regardless of the aperture you use.

To understand the importance of selecting the right aperture let's assume we're using a manual flashgun so we have to set the aperture to get the right exposure.

When working at such small flash to subject distances, the guide number method (guide number/flash to subject distance = Aperture) of calculating correct exposure basically still applies but in practice it's better to do a trial and error test.

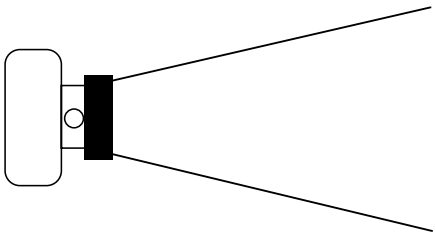
This involves taking identical shots but varying the aperture from F2.8 down to F22. The resulting slides will show the correct aperture for that type of subject. With close ups, you won't need to go through the whole aperture range because the wider apertures will most certainly be over-exposed so bracket your first shots from F11 to F22 to find the correct one for the tone of subject you are photographing. The exact aperture will vary depending on the tone or reflectance of the subject so repeat this test on three subjects of differing reflectance such as a white sea urchin or starfish, a neutral tone subject such as a light green kelp and a dark subject such as a sea cucumber.

Having done this simple test, you are set up to take 36 out of 36 perfectly exposed frames per film and you only need to alter the aperture to take the reflectance of the subject into account.

Close up equipment for non reflex cameras

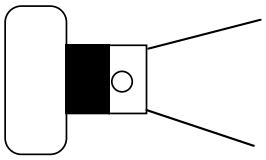
Two main devices enable the standard lens on a Nikonos or MotorMarine II to focus closer than normal:

1. Close up lenses



These optical devices are placed in front of the prime lens and enable them to focus closer - usually about 10" in front of the lens. They can be taken on and off underwater which gives useful versatility.

2. Extension tubes



These physical devices have no optics but just place the prime lens further away from the film. They are only available for Nikonos cameras.

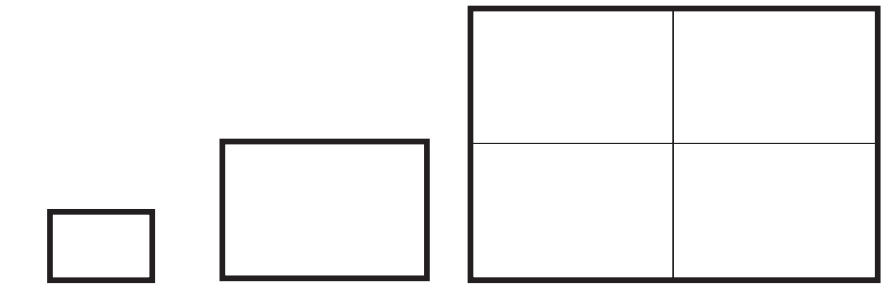
In theory, the further away a lens is from the film, the more light will be needed to get the right exposure but, in practice, because the flash to subject distances get smaller the longer the exension tube you use, the effect is thankfully virtually counteractive.

Extension tubes bring you into focus much closer than close up lenses.

Reproduction rations

In order to quantify the performance of close up devices (extension tubes in particular) the frame area covered is compared to the 35mm film frame size.

A 1:1 extension tube will take pictures of subjects the same size as the 35mm frame i.e. 24x36mm.



A 1:2 extension tube will take pictures of subjects four times the area of the 35mm frame i.e. 48x72mm.

A 1:3 extension tube will take pictures of subjects nine times the area of the 35mm frame i.e. 72x108mm.

A 2:1 extension tube will take pictures of subjects half the size the 35mm frame i.e. 12x18mm.

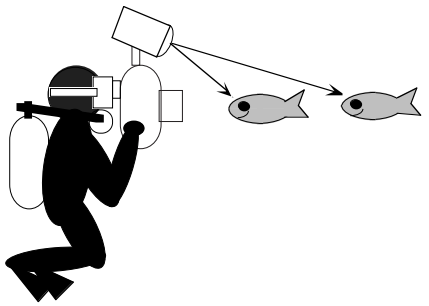
Reflex viewing

For those underwater photographers who use a land camera in a housing, you will be able to have the versatility of a macro lens which lets you focus on anything from infinity down to around 6" from the lens.

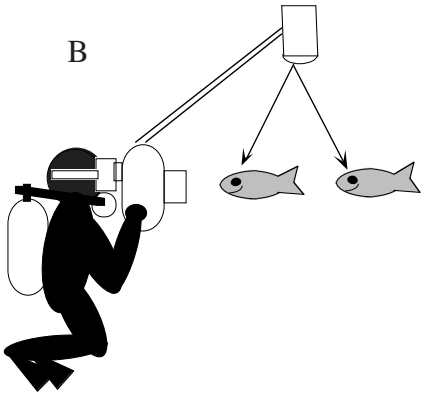
The first two variables of shutter speed and focus are still not a problem but, since the flash to subject distances are going to vary considerably, so too will the aperture. As before, if you're using a TTL system, the correct exposure will be sorted out for you by the system's electronics but, for manual exposure systems, you will have to set the correct aperture.

To simplify what can be a difficult area, it is best to mount the flash over the subject and forward of the camera so that the flash to subject distance doesn't vary much, even though the camera to subject distance varies considerably.

A



B



The flash to subject distance in A will vary considerably as the camera to subject distance varies but will not in B.

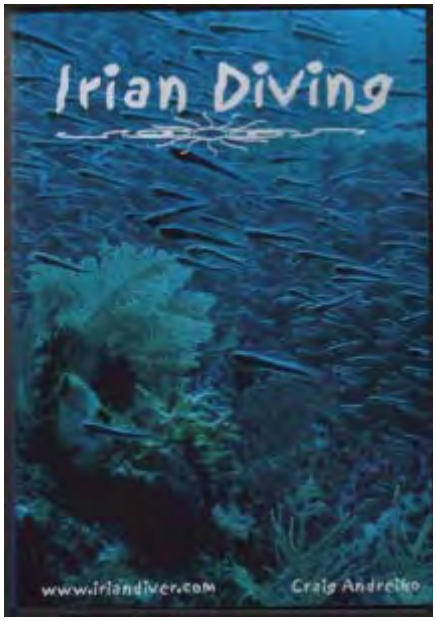
The big advantage of a reflex camera system is being able to see the exact point of focus through the lens as well as being able to frame the subject to your complete satisfaction but this comes with an increased price tag.

In the next issue we'll look at wide angle photography and see why it helps improve your underwater photographs.

Peter Rowlands
peter@uwpmag.com

Book and DVD reviews by Peter Rowlands

Irian diving by Craig Andreiko



This simple DVD is in two parts - firstly a narrated introduction to the area and the dive set up (although I understand the owner in the DVD is no longer in charge). This provides helpful information for those considering a visit to this area.

The second is unfortunately not narrated and you are left to watch competent footage of what looks like an excellent series of dive sites. The accompanying music score is, however, pleasant.

Irian Diving is a useful visual aid to promote the area. However it would have been more helpful to split the underwater section either into seperate dive sites or marine life and the lack of an informative narrative is a lost opportunity.

For further details contact Craig Andreiko www.iriandiver.com

Beneath Southern Seas by Coral Sea Television

This excellent DVD uses the presentation format to its best and provides comprehensive information about Australia's southern seas.

There is nearly 100 minutes of professionally shot and well narrated footage depicting more than 180 fish species and there is also a detailed static information section for each. The fish are seperated into Sharks & Reys, Coastal, schooling, bottom dwellers and rare/protected.

The final section is bonus material showing how the DVD was produced, a 27 minute musical movie "Fish soup", a tour of the Australian Museum's fish collection, an 8 minute audio visual and finally a tatser of their next DVD on invertebrates.

If it is anything like this one, it will be well worth just under £20 inc postage. www.beneathsouthernseas.com.au

100 best dives in Cornwall by Charles Hood

They say you should never judge a book by its cover but I understand I am outvoted when it comes to my opinion about this one. I would have prefered an open water scene rather than some scrap metal but what do I know?

That said, 100 best dives in Cornwall is a well illustrated and very informative book about this very popular UK diving destination. It covers sites on both the south and north coasts.

Each site has a longitude and lattitude position, a rating of how easy/difficult it is, where to launch and when to dive and the nearest dive shop service. Finally there is a brief description of what you are likely to see.

The end section includes very useful information about launch sites, dive shops and local services.

100 best dives in Cornwall is good value at £16.95 and should be available in all good dive shops or from Circle Books 020 8332 2709.

Adventure Bound!

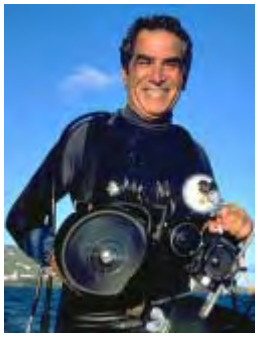
Visions in the Sea 2003

October 25 and 26, 2003
London

Visions in the Sea 2003 will take as it's theme 'adventures in underwater photography'. Our seventh annual conference of underwater imaging will put before you some of the most innovative underwater photographers at work today.

If you are serious about underwater photography you simply can't afford to miss this highlight of the British underwater photography calendar. The dates for your diary are October 25 and 26, 2003 and we are meeting in a new venue a few minutes from Watleroo mainline and underground station in south London.

Adventures with Big Animals with Amos Nachoum



We are proud to present one of the world's greatest underwater photographers. Amos Nachoum will both open and close Visions in the Sea 2003. If it's big, tough to find and even tougher to photograph, Amos either has the shot or is working on it.

He will take you through a breathtaking portfolio that spans the seven seas, from both ice caps to the tropics. His subjects are the stuff of dreams - Great Whales, Polar bears, Orcas and Great Whites from outside the cage.

For most delegates, the subjects that Amos captures on film so eloquently are ones that they can only hope to pursue once in a lifetime. Amos will draw on his years of experience of repeated encounters with big animals to provide invaluable advice on how to make the utmost of your own opportunity when it comes.

Through his specialist travel company, Amos has also made available his adventures to others. His imaginative projects range from seeking out Blue Whales to flying the world's smallest deepwater subs.

For more than 20 years, this former special forces operative has pioneered extreme natural history photography. At Visions in the Sea, Amos will enthral you with two of the most thrilling presentations ever seen in this country.

Adventures in a Small World with Martin Edge

It's called supermacro, and it's often been a dark science to many. How can you achieve ultra high magnification underwater? How do you shoot a creature only 5 or 6mm long and fill the frame with it for maximum impact?

Martin Edge will take you into the world of extreme close ups. Martin is renowned for demystifying the techospeak of underwater photography. The Sport Diver magazine columnist and multiple competition winner is author of the best selling "how to" guide, The Underwater Photographer. Martin's presentation will provide an insight into his forthcoming book dealing with supermacro and other advanced techniques.

Adventures in Digital Imaging with Alex Mustard

Alex Mustard will review his experiences of working underwater with the Nikon D100 digital SLR camera. Alex, who has twice spoken previously at Visions, is a multiple award winner at the prestigious Antibes Festival and founder of the Young Underwater Photographers' Group. His knowledge of underwater camera systems is particularly well

rounded. He shoots on 35mm and medium format and, with his scientific background as a marine biologist, Alex's presentation will be an entirely objective discussion of the pros and cons of underwater digital imaging.

Adventures In Life with Pete Atkinson

Pete Atkinson doesn't sit in an office in a tower block dreaming of the great escape. He has actually done that and is living the dream. A prolific underwater photographer, he uses his yacht as a base from which to dive some of the world's most remote islands, atolls and reef systems, most of which are still beyond the reach of even the most dedicated enthusiast.

He makes a full time living from his underwater photography and feature articles. His work appears around the globe. Additionally, he has received many awards for his images in competition. He has not only been a regular medallist in Diver Magazine's competitions but has also twice walked off with the title of Best British Underwater Photographer. Pete has also taken awards at the prestigious Antibes Festival, including Best Cover shot and also at the world renowned British Gas Natural History Competition organised by the BBC.

Adventures in Depth with Leigh Bishop

Most underwater photographers would never contemplate trying to work at 120 metres in British waters to shoot shipwrecks. However, that is what Leigh Bishop does, and he does it extremely well. Leigh is one of the elite. A true pioneer, bringing back images from a realm most of us would never dare to visit.

Leigh is an active member of Starship Enterprise, the British technical diving team that concentrates on deepwater wreck exploration. With them, Leigh has dived and photographed the classic treasure wreck Egypt in the Bay of Biscay, the legendary Britannic and more recently the liner Transylvania, which rests in 125 metres in the North Atlantic Ocean.

Evocative images are Leigh's' trademark. At Visions in the Sea, he will show you how to take wreck pictures that have real impact as well as depth!

Adventures on Safari with Espen Redkal

Espen Rekdal is based in Norway. But this twenty-something underwater photographer spends little time at his home in Bergen. Instead, he goes abroad for long periods to seek images to meet the demand for his work from stock agencies. He's an unusually versatile photographer. His images run from split levels to supermacro portraits and photography in swimming pools.

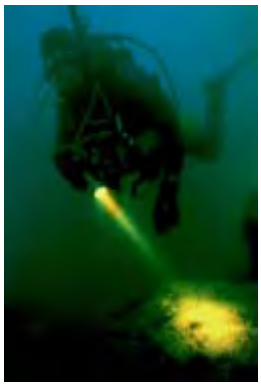
Different as each discipline may be, Espen's work shares a common theme - the results are always creative.

Espen is a stills and videographer as well as a qualified marine biologist. Currently he is working on his master thesis on the behaviour of Wrasse, using remotely controlled cameras. He is also a closed circuit rebreather diver, the advantages of which he will touch on at Visions.

Espen will take us on a tour of his favourite destinations. Along the way he will share his knowledge on choosing the best locations for you and identifying prime subjects.

And as if out main presentations didn't already offer outstanding value, we've been fortunate to bring together a host of other speakers for our mini-talks.

Going Pro with Simon Brown



Simon Brown will talk about the trials and tribulations of trying to turn professional and make money from his underwater

pictures. It's something many of us consider, but only a rare few are successful. Simon will give a reality check as well as describe his triumphs.

Shooting in UK waters and other low viz destinations?

We have two of the best exponents of British underwater photography attending Visions to advise you on how to get classy images that sell.

Paul Naylor will discuss the shooting techniques he used to produce his revised version of Marine Life of the South West. He will explain how he gets close enough to fish to produce his superb images in appalling visibility yet with backscatter free results.

Charles Hood will talk about his first book 100 Best Dives in Cornwall. He will show his images and provide hard won advice on techniques for shooting wide angle pictures in the difficult conditions inherent in British waters.

Slide Clinics

The Visions slide clinics are one of the most important aspects of learning to take better underwater images. Our speakers will be taking their places at the slide clinics to review your work with you on a one to one basis. It is an invaluable opportunity to learn from the best.

Remember, please, only one sheet of slides or 36 prints per delegate. This will ensure everyone gets personal attention.

This is just a taster of what we believe is going to be the best Visions in the Sea yet. There's more to be added to the final program, including competitions, equipment displays and the Visions in the Sea Award for Outstanding Contributions to Underwater Photography...

So get those booking forms in early. With this line up we're expecting high demand.

For further details visit **www.oceanoptics.co.uk**

Underwater Photography
a web magazine

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!

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

Uw photo techniques -

Balanced light, composition, wreck photography 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 with leading underwater photographers

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

How to submit articles

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

1. The text for the article 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:
Resolution - 144dpi
Size - Maximum length 15cm i.e. horizontal pictures would be 15 cm wide and verticals would be 15cm.
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.

Peter Rowlands

Classifieds

For sale & wanted

Second-hand housings for sale and wanted. Second-hand AF housings bought,sold, serviced and repaired. Especially Nikon F601/801/60/70 fit and reduced function types. Photocourses in Ireland/ Scotland.

For details contact Paul Kay on 01248 681361 or email paul@marinewildlife.co.uk

For sale

Sigma 24mm F2.8 lens to fit Nikon with Dome port to fit SUBAL housings (custom made) with focus gear £175.00. Sigma 50mm F2.8 macro lens to fit Nikon with flat port to fit SUBAL housings (custom made) with focus gear £125.00. Both in very good condition. Contact Ian Fussell Tel: 020 7631 5128 Fax: 020 7462 1395 E mail ifussell@pricemyers.com

For sale

Nikon F100 - excellent condition, unmarked, box, cards, manual £600 ono. Contact charles@dive.uk.com or tel +44 771 262 2440

For sale

Nikonos V. Underwater Camera plus two lenses - 35mm and 80mm. Not used for years. Needs batteries and probably a service. Offers around £200. Call John 020 8788 0842 (Putney).

KinnearJM@aol.com

For sale

2 Nikonos V bodies each with 35mm lens, both recently serviced. 28mm f3.5 lens; 28mm viewfinder; 20mm f3.5 lens; Nikonos SB105 & connecting lead. Pelican box to store/transport. Contact davsharp@globalnet.co.uk with offers.

For sale

Mint condition Nexus housings for N90, $850 regular and $1000 master. Ikelite Strobes, chargers, battery packs: substrobe, $500 each-retail $900, includes battery pack. Four sets of ultralight arms-- best offer. Substrobe 100, $150 with battery pack-- retail $600! N90s are only $550. Top condition/negotiable. Aquatic Image:(310)474-8970/ (310)474-3237 fax.]

For sale

Camera system sale: Nikonos V (unused since service) £450/ C&C strobe50TTL£125/Nikor lens 35mm£125/28mm£195/optical viewfinder£100/C&C16mm converter lens£155/Ikelite strobe gantry£100/Ext tube set£50. Buy Complete set £1100(saves(£200).

Tel Nick Hamilton 0208 340 4071(H) 0208 492 8600(W)

For sale

Subal Miniflex Housing for Nikon F90. As new condition, hardly used.+ Macro Port + Dome Port + Nikon F90 body with Subal optic + Nikonos SB102 + All gears, O rings, charger & flash arm
£749 complete (shipping extra)
Tel 01985 300554 Wiltshire UK
Email david.clinch@virgin.net

For sale

Olympus PT-010 housing for C-4000, C-3020 vgc £150. Sony MPK-P1 for DSC-P1, offers? Phone Nick Hanna 01424 439352.

Book a classified in UwP

You can sell or buy your equipment for a flat fee of just £5 (**or £10 with a coloured box surround or £15 with a picture**) payable by Visa, Mastercard or cheque. Your advert can include up to 50 words.

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Film or Digital? It's a Tough Call.

For many people there's no easy answer. Both mediums have pros and cons. But whichever your choose, Nexus and Ocean Optics have you covered.

The new Nexus housings for the Nikon F100 and D100 share the same qualities of design , engineering and premium grade construction that are hallmarks of the Nexus line. Both housings are camera specific. The sculpted design hugs the camera to maintain its compact dimensions.The bodies are aluminium to provide the ideal combination of high strength and low weight. Controls are placed ergonomically for fast precise shooting. Dual Nikonos flash bulkheads are fitted as standard. The Nexus port system extends from a 9 inch superdome purpose designed for half and halfs to ports with full manual focus overide for the Nikon 200mm micro - tele lens. And if you want to get even closer you can utilise teleconverters and the famous Nexus wet lens.

Choosing between a high end film and a high end digital camera can still be a tough decision. But with Nexus designs and Optics expertise you're assured of the best service whatever your decide. And that is definitive.

Ocean Optics

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