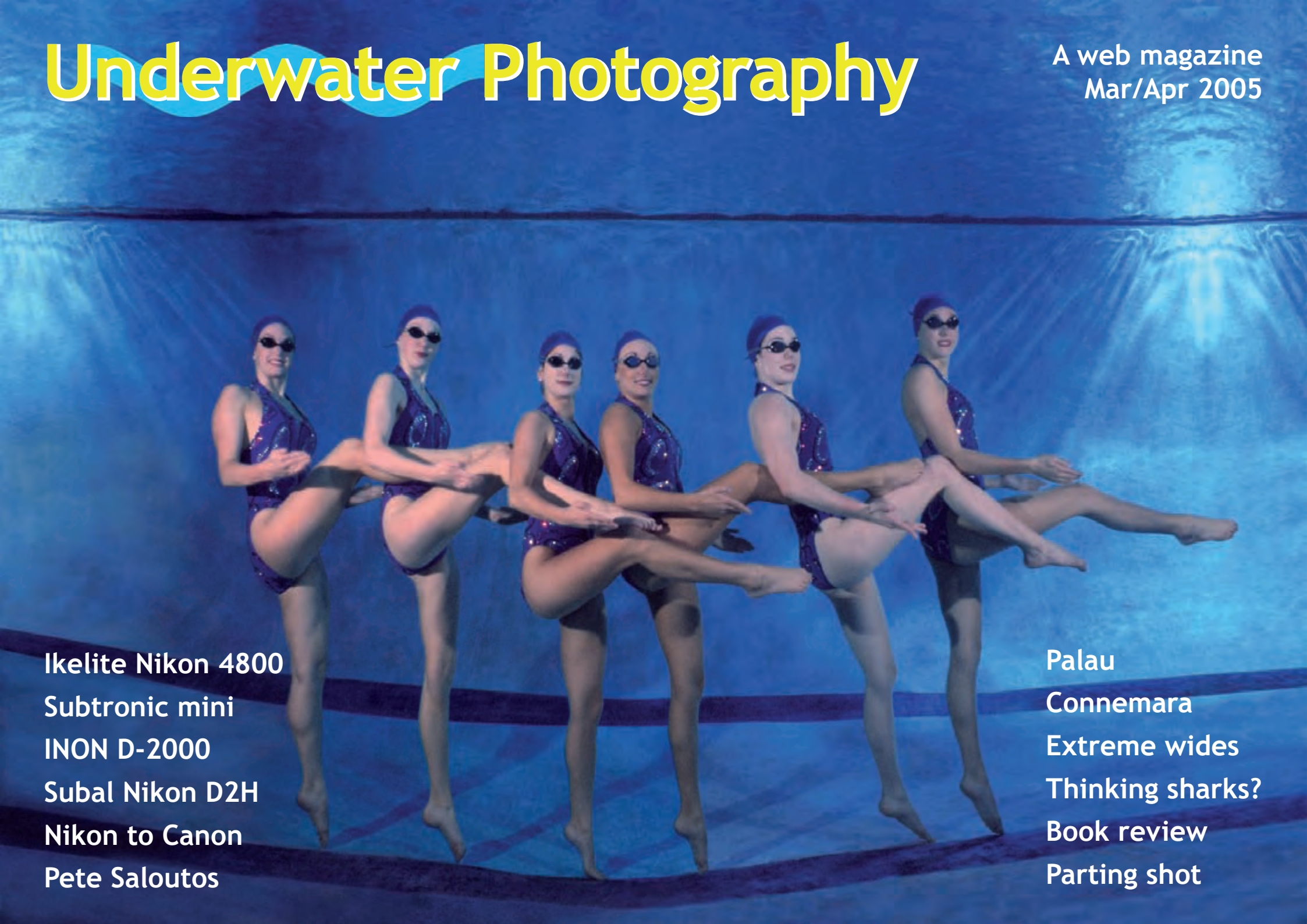
Underwater Photography

A web magazine
Mar/Apr 2005



Michael Aw · Tim Rock · Mauricio Handdler · Bernardo Sambra · Sammy Tanaka · James Watt

OCEANS EXPO2005

Six different perspectives of the oceans and its inhabitants through the lenses of some of the world's best underwater photographers.

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JOHNNIE WALKER

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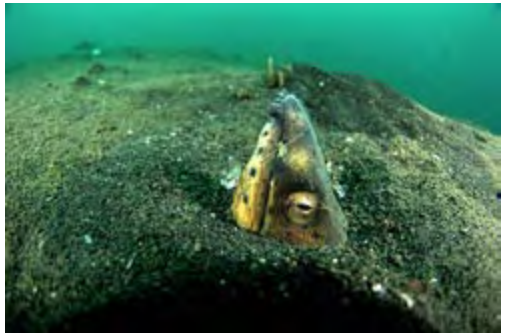

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Editorial

PhotoRescue to the rescue

We all know the amazing capability of digital cameras but there is one thing we perhaps overlook until it happens to us.

Just as digital is so instant at producing results so too can the process work the other way i.e. results can be erased just as quickly! I first learnt this when I used my Nikon D100 to take photos at my wedding. After about 30 shots the LCD screen started flashing "Err" and wouldn't take any more photos.

When I tried to download the images to my computer a message came up "Disk not found". Sweat broke out on my forehead as I thought I would have no images of our joyous day. Nothing I could do would make the disk mount.

Panicking slightly I did a search on the internet and came up with PhotoRescue (www.datarescue.com) and it did just that!

This inexpensive software searched the problem disk and rescued all of the images.

As a result, I never travel anywhere without PhotoRescue!

Housing arrivals

Traditionally housing manufacturers have to wait until they can get their hands on a camera before they can start work designing and producing housings.

Imaging my surprise when I heard that Alex Mustard had taken delivery of his housing for a Nikon D2x a day before the camera was released in the UK!

The reason for this is because Nikon had used the identical camera chassis from a previous digital SLR for which Subal had already made a housing. The result was a manufacturers and underwater photographers dream - a housing being available as soon as the camera hits the market.

It makes great financial sense for Nikon to use an existing chassis while upgrading the sensor chip and electronics. This saves R&D time and expense and Canon have also done this with some of their high end DSLRs.

This new development helps both the camera and housing manufacturers as well as underwater photographers.

Maybe the digital age is slowing down afterall!

Readers lives

UwP covers

Pete - Greetings from the Old Sod - Can I just say - you have produced consistant stunning covers for the mag - Outstanding and original image concepts - Great work - well done - Loving it. - Nigel.

Nigel Motyer
nigelmotyer@eircom.net

Please note: Unprompted E mails like this will always get published. Ed.

Photo piracy

Dear fellow divers and u/w photographers.

Recently, the lark struck me and I typed in my name in the google.com search engine. Imagine my astonishment when a picture of mine popped up on a web site yet they had neither asked me for permission to use one of my pictures, nor provided any credit whatsoever.

In contrast, when the British Society of Underwater Photographers" announced that issue no. 11 of UwP (with my coverphoto on aquarium photography) was available, they correctly displayed the copyright symbol and named me as the photographer.

As an amateur u/w photographer, I probably would have been tickled had they just asked me - perhaps in exchange for a future free dive. But now, instead of tickled, I am ticked off. Nobody can just 'borrow' (i.e., steal) my - and your - pictures without permission.

May I suggest that you type in your name in a search engine as well, and that you send an equally unequivocal message to whoever may have 'borrowed' your pictures.

Jurgen Brauer
brauer@comcast.net

Peter - just to update you on the copyright story. The dive resort owner and the web master both now have apologized, and we have come to an agreement. So, to calm the waters, perhaps you can publish my letter but without naming the outfit by name. There is no need to publicly embarrass them while still raising the issue for other (amateur, semi-pro, or full-time pro) photographers to look into.

peter@uwpmag.com

Ocean Optics

Ocean Optics and Mavericks Diving. Your One Stop London Dive Centre.

Opening March 2005

At our new central London showrooms you'll discover only the finest underwater camera equipment. As underwater photographers ourselves, we have the experience to select the products that will help you make great underwater images. And our reputation, built over a quarter of a century, means we never have to offer second best - top designers and manufacturers want us to represent them.

We're exclusive UK agents for Subal, Nexus, Subtronic and Inon, as well as major stockists of Canon, Sony and Olympus housings.But the best equipment is nothing without the best advice.

At Optics we'll never hard sell you or push you to buy something you don't need. It's our passion for honesty and service that's won us the custom of so many of the Uk's top shooters.

Now we're taking those same qualities and applying them to diving equipment. So when you visit Ocean Optics, you'll also have access to superb scuba and freediving kit through our sister company Mavericks Diving Ltd.

Ocean Optics and Mavericks Diving. Your one stop London underwater and recreational diving centre.

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7 Bush House Arcade, Bush House
Aldwych, London , WC2B 4PA

www.oceanoptics.co.uk

www.mavericksdiving.co.uk

News, Travel & Events

New Dive Shop And Underwater Photography Centre opening On London's Strand

A new dive shop and underwater photography centre is opening towards the end of March 2005 on London's Strand. Mavericks is a new name from a familiar face. Owner Steve Warren has worked in the diving industry since 1984 as an instructor, retailer and journalist. Since 1994 he has owned the specialist underwater photography company Ocean Optics. " Mavericks is a natural development to create a one stop dive centre. It brings the finest underwater camera equipment and best sport diving equipment to one easily reached central London location".

Steve emphasises that this is an expansion for Ocean Optics. "We'll have more space to properly display our main ranges from Subal, Nexus, Inon and Subtronic. We'll be running occasional presentations from groundbreaking underwater photographers and providing in water tuition for beginners using radiophones to help us instruct". Warren promises more to come. "We'll be introducing diver training with an emphasis on small classes, greater pool time for practising skills and an open approach towards risk and risk avoidance."Mavericks Diving Limited and Ocean Optics are located at 7 and 8 Bush House,Aldwych, a short walk from Temple, Covent Garden, and Holborn Underground Stations. Tel 0207 930 8408.

www.mavericksdiving.co.uk

Underwater Digital Photography Workshops

at Kungkungan Bay Resort

August 6-27, 2005

Whether a beginner or digital pro, take your digital photography to the next level with Rod Klein, Digital Editor of Fathoms Magazine and Kungkungan Bay Resort for a series of underwater digital workshops August 6-27, 2005 in what is arguably one of the best destinations on the planet for macro photography - Lembeh Strait.

Rod will conduct workshops throughout the period with schedules arranged to meet guests' individual needs. Normal workshop length will be 6 days.

Topics to be covered include: digital vs film, proper camera set-up and preparation, exposure of digital cameras, media cards, file types, underwater lighting and composition, and photo retouching. Photoshop seminars will also be given.

Lembeh Strait is home to some of the most fascinating creatures in the world including the pygmy seahorse, mimic octopus and Ambon scorpionfish.

www.eco-divers.com

Guam's Fish Eye Marine Park photography gallery

Marine photographer and Micronesia resident Tim Rock stands in front of spinner dolphin images at the new Fish Eye ocean photo gallery.

Going to Micronesia? Guam's Fish Eye Marine Park has opened a new ocean photography gallery. This small gallery hosts photographic images from the underwater world around Guam, Micronesia and Indo-Pacific by internationally published photojournalist and UwP contributor Tim Rock.

The gallery is open daily free to the public from 10 a.m. to 2 p.m. Signed prints will be on sale of selected images. As an added bonus, Guam's Fish Eye Marine Park Logo Shop has a new display of Palauan storyboard carving that is open free to the public. This display features the work of Palau's master storyboard carver Francisco Sbal. The late Mr. Sbal was the first student of this artform in the 1930s in Palau and is recognized as a master carver.

For information, contact the Fish Eye Logo Gift Shop at 477-3343. The Fish Eye Marine Park gallery facility is located across from the Fish Eye Undersea Observatory in Piti, Guam.

Dive Chronicles' Digital Jam Report

The last week of January attracted more than 30 underwater photographers from around the world to take part in the inaugural Dive Chronicles' Digital Jam. Digital Jam is a combined digital photography workshop and competition, offering $20,000 worth of prizes. Two dive centres were involved in this inaugural year: Ocean Frontiers at the East End of the island and Dive Tech based in West Bay. Each centre laid on a week of special photographer friendly diving, combined with lectures and workshops, with on hand advice from resident host photographers. The Dive Tech group was lead by Geri Murphy, one of the world's most successful underwater photojournalists, and the Ocean Frontiers group by UWP contributor, Alex Mustard.

"It really was a special week; great company, great diving and great photography," Alex told UWP. "It was very refreshing to be teaching pure digital - the technology means that you can teach underwater photography in a completely different way. My course wouldn't even have worked for film! I was also able to take the gang to some of my special sites, including a dawn dive with a school of 80 stingrays at the Sandbar.

The Digital Jam sign, with host Alex Mustard.
Top right. The Digital Jam group at Ocean Frontiers.
Right. Schooling stingrays at dawn at the Sandbar. The whole school numbered 80. Photo by Alex Mustard.

"Dive Chronicles and the other sponsors laid on all sorts of diving gadgets for us to try throughout the week: Sealife digital cameras, Oceanic MP3 players and dive computers, DUI BCs and Amphibico video cameras.

"The climax of the week was the Dive Chronicles Awards Party with

This classic and natural Caribbean Reef Shark portrait won the wide angle for SLRs category. Taken by Ingvar Eliasson.

the week's images judged by Cathy Church, with Geri and me. I am very proud to report that my group won 6 of the 7 categories, with prizes including trips to Papua New Guinea, Wakatobi Indonesia and the Bahamas and kit including a dive computer and an underwater metal detector! The week was about far more than prizes. It was first and foremost a fantastic week of photographic diving with like-minded people. But maybe I am just saying that because I didn't win a prize!"

You can see all the winning images from Digital Jam 2005 on the Dive Chronicles website www.divechronicles.com. Next year's Digital Jam is already scheduled for January 2006. Contact lesley@oceanfrontiers.com for more details.

www.divechronicles.com

Turks & Caicos photo course with Mauricio Handler

27 Aug- 03 Sept 2005
From US$ 1,995.00

Once again the beautiful turquoise waters of the Turks and Caicos Islands will be the backdrop to this acclaimed week of underwater photography now in its fourth year. The course is geared for film and digital housed SLR owners who want to expand their knowledge of underwater image making and learn new advanced techniques to achieve award wining images as well as to those who have just acquired a new housed system and want to learn how to use, maintain and make the most of their investment.

In a time of point and shoot and generic imagery, this week brings a refreshing look at the craft of underwater photography.

Subjects covered include natural light, single strobe, multi strobe and mixed lighting photography, wide, macro and extreme macro image making in addition to splits (half above/ half under).

Marine life found in the area include large schools of Horse-eyed Jacks, Caribbean Reef Sharks, Eagle Rays, stunning vertical walls, and a multitude of macro life on the edge

Julia Handler photo

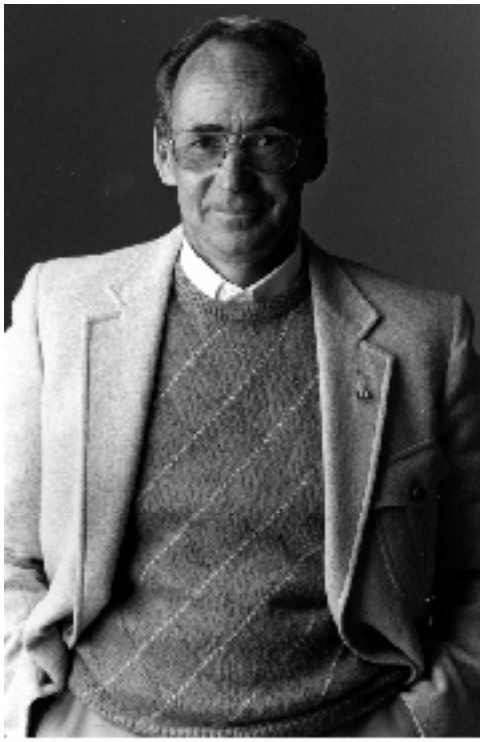
of abysmal drops. There is unlimited Nitrox diving all week with just a few restrictions.

You will be required to spend some five hours of underwater working time every day. This is not a vacation, so come prepared to work hard. The results will take your work to new heights simply not possible in other workshops.

Daily image critiques, evening slide and digital presentation and portfolio reviews.

www.reefrainforest.com

Beneath The Sea 2005 Presents Ernie Brooks II



When Beneath the Seas 29th annual Ocean Exposition, Adventure and Dive Travel Show convenes at New Jersey's Meadowlands Exposition Center in Secaucus, New Jersey March 18th, 19th and 20th, 2005, Ringmaster for the Film Festival will be the notable photographer, emcee, raconteur, and Master-of-Ceremonies: Ernie Brooks.

If there is anyone who understands photography and the magic that creates an exceptional photograph it is Ernie Brooks. Until recently Ernie was President of the internationally renowned Brooks Institute of Photography. Today in his book, "Silver Seas," he has produced a magnificent collection of images celebrating his view of the underwater world and the creatures that live in it.

At Beneath the Sea, as the master-of-Ceremonies of the Saturday Night Film Festival, Ernie Brooks will bring this sensitive love of the ocean and underwater photography to the people who, in Ernie's words, "are a special people with a common bond … love of the ocean and the creatures in it."

Ernie Brooks is a gentleman of the sea, a teacher who is also a scholar, a photographer as visionary whose collected work makes him an environmental philosopher. Ernie Brooks's insights into the world beneath the sea are not merely interesting, they are inspiring, exciting photographs that make you want to pick up a camera and rush to the sea.

Ernie Brooks at Beneath the Sea at the Meadowlands Exposition Center in Secaucus, New Jersey March 18, 19, 20, 2005. For directions go to WWW: Mecexpo.com – for more information about Beneath the Sea go to:

WWW.BeneaththeSea.org

Sulawesi photoquest with Martin Edge

2nd-16th October 2005

The combination of reef vistas and coral seascapes in the Bunaken Marine Park with unique 'creature encounters' in Lembeh Strait offers an amazing series of photo-opportunities for the underwater photographer. Combine this with easy air travel on excellent airlines, very comfortable accommodations, lots of diving and Martin Edge and you have the ideal trip for those wanting to further their underwater photography skills.

Martin Edge has been leading underwater photo expeditions and courses for the last fifteen years and leading groups with Divequest since its inception in 1996. Working with aspiring underwater photographers is a great inspiration to Martin. Channelling enthusiasm, encouraging experimentation, calming those equipment mishaps is all in a day's work for him. Nothing gives him more satisfaction than the seeing those expectations met with delight at the end of the day when the slide films return from processing!

But things are changing in the world of photography. The digital photographic revolution is gaining momentum and there is no going back. Instant feedback of underwater pictures via the camera LCD screen takes no more than one second! (Remember the time when one thought that having a processed roll of E6 slide film returned before the end of a days diving was quite an achievement?) Martin finds digital underwater photography a welcome challenge.

www.divequest.co.uk

WETPIXEL.COM
digital imaging for divers

Wetpixel Redesigns Site, Adds Features

Wetpixel.com, one of the the web's premiere information and community sites for digital underwater photography, has gone live with a ground-up redesign. In addition to streamlining the presentation of data, Wetpixel has added many new features, including easy-to-access article archives, RSS and Atom feeds, member galleries, and hosted weblog space.

Also improved is the administration area of the site, which will serve to increase accessibility to a larger group of content contributors. "As we adapt to the new system, you can expect a lot more content on the front page," said Eric Cheng, Wetpixel's owner and editor. "Our goal is to harness and organize the knowledge of our community of more than 3,000 registered members."

Membership is free.

You can access Wetpixel at

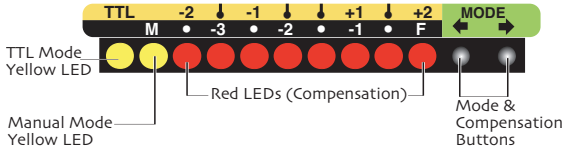
www.wetpixel.com

Ikelite SLR-DC Housings offer eTTL Compatibility.

To extend the capabilities of the digital SLR cameras Ikelite designed the SLR-DC underwater housing. This housing is injection molded of clear polycarbonate for strength, visual access to the camera, LCD screens and camera controls. The ergonomic design places camera functionality at your fingertips for the ultimate in creative control. The interchangeable port system accommodates a wide variety of lenses from macro to wide-angle to zoom. The rubber handles offer excellent grip and a quick release system for Ikelite's new SA-100 Arm system. An external Ikelite connector is provided to connect single or dual Ikelite Substrobes.

For •Canon EOS Rebel •Canon EOS 300D •Canon EOS 10D •Canon EOS 20D

These Ikelite SLR-DC housings for Canon have Conversion Circuitry built into the camera tray. When used with an Ikelite DS Substrobe; the Conversion Circuitry provides real Canon eTTL flash exposure with over and under-exposure compensation of two f-stops in half-stop increments. At the push of a button, switch to Manual Exposure Mode which provides eight power settings in one-half stop increments. All exposure compensation is done with 2 buttons on the back of the housing, no accessing complicated camera menus.



Think Digital

SLR-DC Housing Features:

- Clear Molded Polycarbonate
- Corrosion Free
- Interchangeable Port System
- Clear View of Info Window
- Clear View of LCD screen
- Most Camera Functions Available
- Weighted for Neutral Buoyancy
- Quick-Release Strobe Mounts
- Rubber Hand Grips
- External Connector for Substrobes
- Super-eye Magnifier for Enhanced Viewing with a Dive Mask.
- Weight 6.6lbs. (2.9k)
- Dimensions 7.5"L x 4.75"W x 7.25"H (19cm x 12cm x 18cm)

ikelite
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50 W 33rd Street
Indianapolis, IN 46208
317-923-4523

www.ikelite.com

Ikelite SLR-DC Housings also Available for

•Nikon D70 •Nikon D100

•Olympus E-1 (TTL)

New products

Ikelite Nikon Coolpix 4800 housing

Ikelite have announced a new mini-version of their heavy duty thick wall housings that is virtually indestructible, has 200 feet depth capabilities, and is priced like thin wall housings with limited depth rating.

This Nikon digital camera provides excellent results at a very realistic price. Drop into the housing for a fun and satisfying experience. All camera functions are accessible.

The housing is moulded of corrosion free clear polycarbonate and operates safely to 200 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 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.

The lens port allows attaching the optional UWL-100 wide angle lenses produced by Inon and Epoque. The port accepts the 67mm threads of these conversion lenses which can be attached and removed when underwater.

For more information visit

www.ikelite.com

Light & Motion Blufin FX1

Light & Motion is proud to announce a new professional underwater housing for the Sony High Definition HDR-FX1 and HVR-Z1U Camcorders.

The new housing will have an advanced feature set that will satisfy even the most discriminating videographers. HD technology is now available at a fraction of the price and size of the original HD systems. The resolution improves on conventional miniDV camcorders, rising from 480 x 720 up to 1080 x 1440 pixels. If you own a high definition capable display, you can start using it to its full potential.

Bluefin FX1 coming soon!!

www.uwimaging.com

Fantasea FD-70 Housing for Nikon D-70

Fantasea Line is pleased to announce the development of the FD-70 housing for the Nikon D-70 digital SLR camera. The FD-70 is scheduled to be launched in early 2005.

Here are some of the first photos of the FD-70 Housing.

Target retail price with anti flooding insurance and standard lens port less than $1000.

For further details visit

www.fantasea.com

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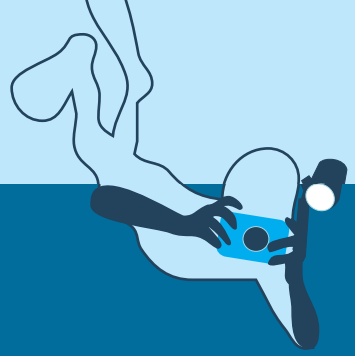
FANTASEA line



Fantasea Line Introduces:

FD-70 Housing
For the Nikon D-70 Camera

Also: The Coolpix Collection for the Nikon
2100, 2200, 3100, 3200, 4100, 4200, 4300, 5100, 5200
Coming soon !!! 4600, 5600, 7600, 5900, 7900, 8700 and 8800.

NEW PRODUCT !

Suggested Retail price **$999**
including standard port and anti flooding insurance program!

Accessories:
Strobes, Wide angle and Macro lenses, Arms, Trays, LED Lights and more now available!

Purchase On-Line at best rates ever :
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For more information: info@fantasea.com

Subtronic Mini Digital

The Subtronic Mini Digital is a compact high performance strobe developed for Camera Controlled Flash (CCF) exposure with digital cameras. It is suitable for use with digital cameras encased in clear housings as it depends upon the slave sensor being able to see the cameras own flash firing. The Subtronic CCF technology is extremely accurate as it uses the cameras own light meter to determine correct exposure. There is a calibration feature to ensure the CCF is matched to the camera you are using. The Mini also provides five manual power settings for difficult subjects that can confuse your camera resulting in poor exposures or for creative lighting control.

An LED modelling lamp is built in. These helps you to confirm proper strobe placement and illuminates your subject at night or when working in shadow, such as under an overhang.

www.subtronic.de

www.oceanoptics.co.uk

Amphibico Phenom FXZ1

Amphibico has launched its all new, full-featured Phenom FXZ1 HDV Marine Housing.

The housing will provide access to all key camcorder functions to depths of 330 feet or 100 meters and includes Amphibico's usual high quality, full zoom-through 94 degree optics.

www.amphibico.com

Subal Canon 20D, available with the new GS viewfinder.

Following the success of the 10D, the 20D is the latest offering from Canon, thought by many to be the market leaders in digital photography. The 20D is an 8 megapixel DSLR, offering the handling and build quailty many would expect from a pro level camera.

The housing features a total of 18 controls, the ergonomic positioning gives comfortable access to the cameras functions, in the form of push buttons, levers, and rotary dials. Many other features which are synonymous with Subal have been carried over to the C20.

The camera is mounted on a saddle providing precise positioning inside the housing - installation errors are nearly impossible. A large O-ring provides maximum security as does the trustworthy Subal Quick Lock latching system, which makes it virtually impossible to close the lid if the O- ring is not in its groove. It also featues two Nikonos V flash connectors, but can also be fitted with Subtronic S6 sockets, giving TTL with a Canon flash gun such as the 500 EX.

The rear viewing window is shaded by the housing back, making the LCD screen bright and clear.

The housing is machined from a solid block of aluminium making it hard wearing but light, weighing in at just over two kilograms. Around two thirds the weight of some polycarbonate housings.

www.subal.com

www.oceanoptics.co.uk

Sigma 10-20mm lens

The 10 - 20 mm F4.0 - F5.6 is an interesting super wide-angle lens which would provide 15 - 30 mm equiv. on a 1.5 FOV crop camera (such as the Nikon D70).

This lens also features Sigma's HSM (HyperSonic Motor) for high speed silent focusing with manual focus override.

New Mistral twinhose

Aqualung have announced a new twin hose regulator. The first commercially available sport diving regulators used two hoses - one to feed air to the diver, the other to remove exhaled air. Both hoses meet at a valve at the divers back. But by the early 1970's twin hose regulators had largely given way to single hose models.

Veteran underwater photographers often favoured twin hose regulators because they could make shy subjects much more approachable. This is because exhaled air leaves from behind the divers head. The bubbles are also better dissipated by the valve casing . Basically, the fish doesen't get buffetted as much as when you exhale through a normal regulator mouthpiece.

The new regulator is called the Mistral in honour of the original Mistral series of twin hose regulators which were renowned worldwide in the early days of the sport. The 21st century model is available in a clamp or DIN fittings and has take offs for an octopus and direct feeds. There's even a special edition for collectors!

www.aqualung.co.uk

Two Nexus Digital Dome Ports

Nexus have introduced two compact ports specifically designed for use with Nikon's 12 - 24mm wide angle zoom and 10.5mm fisheye digital lenses. Both ports use glass optics and feature aluminium bodies. The 12 - 24mm port is about 125mm in diameter, barely wider than the Nexus housing port mount itself. It is only 70mm long. A metal lens shade is optional.

The 10.5mm port is even slimmer at 110mm in width and just 55mm in length. It has a built in four leaf hood to help protect the optic and minimise flare.

Both ports are exceptionally small considering the lenses that they accommodate. Nexus include a front protective cap and a spare O ring as standard.

www.oceanoptics.co.uk www.usanexus.com

Sea & Sea YS-15AUTO

An ultra-compact auto-slave strobe designed specifically for digital cameras. The YS-15AUTO synchronizes with or without an optional fiber-optic cable to your digital camera's built-in flash.

For more details visit www.seaandsea.com

A first impression of the Nikon D2x and Subal ND2 Housing

by Alexander Mustard

INTRODUCTION

We live in a hurly-burley disposable digital age. When it comes to technology we all want the latest and greatest, and we want it now. Or preferably yesterday! To meet this demand, digital products can be rushed to the market without due care and attention and everything from computer software to digital cameras regularly receive user installable updates to fix bugs and improve performance. Nikon have taken a different approach with their new flagship digital SLR, the 12.4 megapixel D2x, and have only released it when they were ready. The D2x is late, and my early impressions suggest that it has been well worth the wait.

Please bear in mind that the D2x was only released a couple of days before UWP 23 went to "press" so this review is very much a first impression. Off the record I have been blown away by the image and overall quality of this camera, but in this review I intend to be more objective with my comments, and I will save the purple prose until I have had the chance to dive it. This camera has high specs and a 260 page manual to cover them. I have tried to limit this review to the features I feel most applicable to underwater photography.

The question on many camera-fans' (but maybe not photographers') lips is can the new Nikon beat the current global benchmark, the mighty Canon 1DS Mk2. Well, I am afraid I am

not going to answer that question for two reasons. First I have not had experience with both systems underwater. And second I believe it has little real relevance, except for bragging rights. I say this because nearly all of the early comparison tests have shown that when used properly both cameras are capable of exceptional results, well in excess of the quality of 35mm film for large prints. These are both very expensive pro-level cameras, they are not going to be anyone's first camera and undoubtedly, an individual's choice will be influenced by the kit that he or she already owns. For this reason I have tailored these first impressions towards existing Nikon-mount 35mm and digital SLR users.

THE NIKON D2x

The D2x offers several advantages over existing Nikon SLRs for underwater photography.

This image shows the difference in resolution, colour and white balance between JPGs shot with a D2x left and D70 and flash. The colours in these images are straight from the camera, shot with auto white balance.

The most obvious is image quality, which I feel is a sizable improvement over all Nikon DSLRs. The D2x produces images of 4288 by 2848 pixels, and their quality makes them highly suitable for "uprezzing" to massive print sizes. However the pixel count is only a small part of the image story. I have been shooting the camera back to back with a Nikon D70, and it is the fact that the images are so vibrant and clean that makes them stand out more than the resolution. Potentially very encouraging

is that blues and cyans are vivid and saturated, and reds and yellows are recorded with accuracy (I will confirm this potential in the ocean and report in the next issue of UWP). I have also read reports that the camera handles strong highlights, such as sunbursts, very well and I am looking forward to testing this capability underwater.

Personally, I have never shot a digital image underwater at anything other than base ISO , but I feel obliged to mention the ISO performance since it is such a hot topic in digital debates. I have found the image quality to be exceptional at the base ISO of 100, excellent at ISO 200-400, and good at ISO 800 when used with flash. At ISO 800 the noise is visible when the images are zoomed on a monitor to 100% or above, but there is little chromic noise. Even at ISO 800 the colour and sharpness of the images remains impressive. That said, from what I have seen I think that some of Canon's digital cameras (e.g. 1D Mk2 and 1DS Mk2) outperform the D2x in their control of high ISO noise.

These digital-days many people seem to forget that there is more to a camera than its sensor. The D2x uses an improved version of Nikon's Multi-CAM2000 11 point Auto-Focus sensor, which is a generation beyond the F5, F100, D1 series Multi-CAM1300 5 point sensor and two steps up on the D100 and D70's Multi-CAM900. This AF system is amazing. Through this camera the worlds bristles into immediate sharpness. The 3-5-3 football team of AF points adheres to the rules of thirds formation, and the sensors can be grouped or controlled dynamically by the camera.

The Multi-CAM2000 is already well known for its low light/low contrast AF ability and I think will be a real advantage for macro shooting underwater. The viewfinder is bigger and brighter than the D1, D100 and particularly the D70. Sitting here in front of my computer with a D2x and 35mm F100 - the D2x is notably brighter, but a bit smaller. The 'plip' of the shutter oozes quality. Indeed the whole camera does.

Perhaps the most notable difference when shooting with both the D2x and D70 is the LCD screen. The D2x offers the full widescreen cinema experience - 2.5 inches across and 235,000 dots (the D70 is 1.8 inch and 118,000 dots). The LCD also allows you to check the RGB histograms and to verify sharpness by zooming to a massive 27 times the original magnification. This information is available as soon as you can press the buttons after taking the image, with both RAW and JPG. Shooting digital is very different from shooting film, and "chimping" over the LCD screen, reviewing your shots critically while in the water, is a crucial part of the technique of digital underwater photography. The D2x's LCD offers a massive advantage in this area.

White balance is controlled from three separate sensors and was another very strong performance area of the D2x, compared with the D70. This was particularly true when shot under mixed lighting with flash, which bodes well for underwater shooting. For filter fans the camera offers both preset white balance (using a grey card or any neutral coloured object) and the ability to directly set the colour temperature in Kelvin or mired. Five custom white balance settings, including those taken from previous photographs or from Nikon Capture, can be stored in the camera.

The main disadvantages of the D2x are immediately obvious. The first is price - $5000 USD. There is an old adage from marine science that goes "Never put any kit in the ocean that you cannot afford to loose"... The second is size. In underwater photography a good small camera is always better than a good large camera because this means less bulk for travel and a smaller housing in the water. That is why I rated the F100 ahead of the F5. The D2x is a very similar size to the F5 and consequently all the housings will be sizeable.

Big housings require more effort to push around underwater and can make it harder to get down on the eye-line of creatures lying on the seabed. (Nikon's replacement for the D100, whenever it may be announced, will probably solve these two problems.)

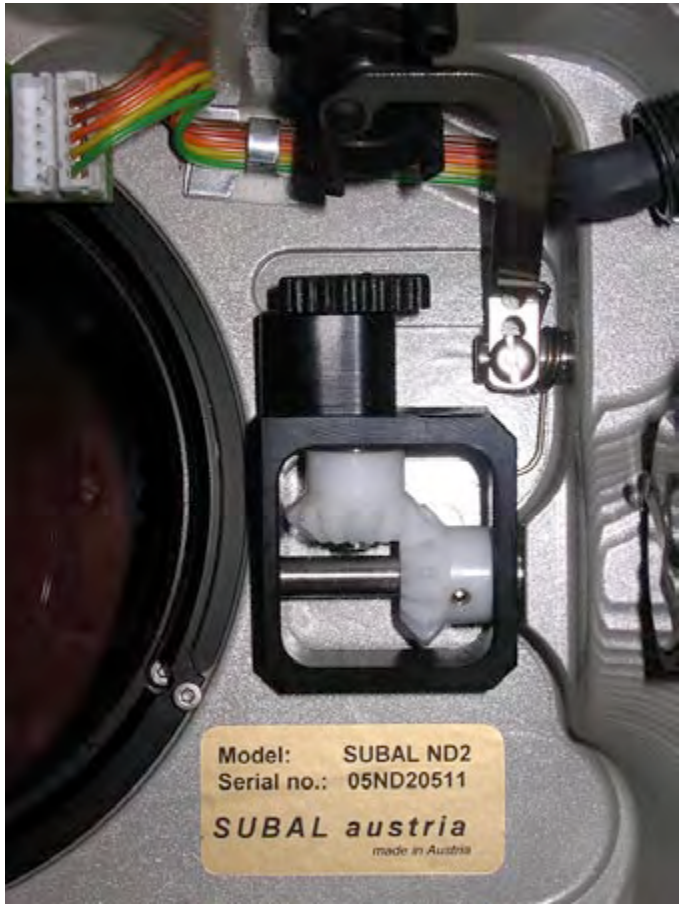
THE SUBAL ND2

I actually got my Subal ND2 housing the day before the international release date of the D2x. This was possible because the D2x is built on the same magnesium chassis as the D2h (a low resolution camera designed primarily for newspaper photographers). My housing is actually labelled as a ND2H - a reminder that Subal designed the housing around the D2h! Anyway, I took the housing to my camera dealer to collect my D2x and was pleased to be able to tell Subal that the D2x fitted perfectly in their housing and all the controls lined up without adjustment.

I have written reviews on Subal's previous housings for Nikon DSLRs. While I have felt that these housings have been amongst the best available, I have always noted that certain controls were slightly compromised and not up to Subal's own standards of refinement, established during the days of film. The reason was always obvious: digital cameras have a limited shelf life and people want the housings as soon as possible. Back in 1999, I waited a year and 4 months for my Subal F100 housing. Last year I reviewed a Subal D70 housing in August and the camera had only appeared in March. This short development time has its compromises.

Anyway I can say without a doubt that the Subal ND2 is a true Subal. Every control is correctly geared (i.e. 1 click, one stop), weighted and falls to hand. Everywhere, you can sense the care that has gone into this housing. It oozes quality craftmanship. Ergonomics may only seem like small issues but, over tens of thousands of pictures, they make a difference.

The ND2 offers 29 controls for the camera!



When gripping the Subal ND2 my fingers automatically fall onto the shutter and aperture knob, while my thumb controls the shutter speed dial.

Left. This image shows the quality of the engineering of the controls in the ND2 housing. Note the gearing for the aperture dial that ensures a one click = one stop control of the aperture dial. Also note the options for manual (3 pin) and TTL (5 pin) sockets for the flash connector.

Lenses and memory cards can be changed without removing the camera from the housing. But the camera must be slid back on the mounting tray to down load images via the USB2 cable and to change the battery.

The only additional control I would like to see is one for the programmable Function button control that is below the depth of field preview. This control can be programmed to implement various changes to the camera at the touch of a button (although all such changes are available through the more cumbersome menus). I doubt any housing manufacturers will support this button because of its awkward position. The main controls all fall immediately to hand. While holding the right handle, my middle finger falls on the shutter, ring finger on the aperture knob and thumb on the shutter speed (or AE-lock). Furthermore, while holding the left handle my thumb falls neatly onto the all important image review button. All the other buttons are most easily operated with the left hand, while keeping the right hand on the handle.

Lenses and the memory cards can be changed without removing the camera from the housing. The camera must be slid out of the housing on the mounting tray to change the battery, but this will usually last through a full day of shooting,. The camera must also be slid back on the tray to download pictures via the USB2 cable. One disadvantage when the GS Viewfinder is fitted (which mine will have when my bank account has recovered from its recent exertion) is that the housing cannot be easily laid on its back when changing lenses and ports. The LCD is well shaded from daylight and unobstructed. The D2x has an external white balance sensor on top of its prism, which cannot see any light when inside the housing. A few weeks ago I asked a Nikon technician about the consequences of this and he told me that the camera ignores this sensor when it is covered up (after all it has two other white balance sensors). So I am pretty confident that this will not be an issue.

Finally, I should mention that this camera produces large files (RAW pictures are close to 20MB) and it is important that you have sufficient storage and computing power to handle them. I am using a 4GB card with this camera at the moment, which gives me 199 RAW files.

SUMMARY

The D2x is an incredible camera that significantly outperforms all the existing Nikon mount digital SLRs. The quality is such that I will no longer travel with a film camera because, from what I have already seen in my first couple of days, it produces superior images for large printing.

The D2x is not the camera for everyone. First it is expensive and many of its specifications will greatly exceed the needs of most people (I certainly don't need its high-speed cropped sensor mode with 8 frames a second, or a Wi-Fi communication or GPS compatibility). More importantly while it captures images with vivid detail, it also captures your mistakes with the same clarity. Its rather like shooting medium format, if you are sloppy with your photography the D2x will expose you. I expect the same will be true of poor lenses and optically compromised dome port set-ups. Just as Nikon have put in that extra effort in when refining this camera, and Subal have added that extra level of quality to the housing, I feel I will have to raise my game as a photographer to get the most out of this superb setup.

Alex Mustard
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In-depth photography portfolio with trade secrets revealed, Best Dive Sites

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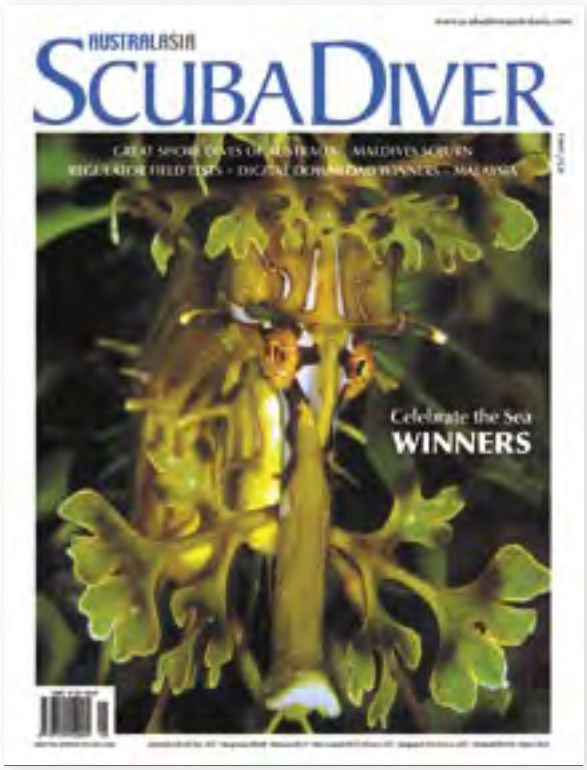

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Switching from a Nikon to a Canon System

Text and Photos by James Wiseman (Except as noted)

In November 2004, I decided to switch camera systems from Nikon to Canon and I thought I would share my thoughts and experiences in case other photographers are considering doing the same thing I've done.

I began digital underwater photography with the best-in-class 3 megapixel Nikon Coolpix 990 in an Ikelite housing. About a year later I upgraded to the newer version of the Coolpix – a redesigned body with a 5 megapixel sensor. Both of these compact cameras retailed for under $1,000 and there were excellent compact Ikelite housings available.

Eventually, I decided that I'd like a camera with interchangeable lenses and a better sensor. At the time, there were only two cameras available in my price range, the Canon D30 and the Fuji S1pro. I decided on the Fuji so I sold all my Coolpix equipment and bought the S1ProDSLR body and a 60mm Micro lens. I didn't think I'd house the S1pro, but I thought it would be a good chance for me to learn about SLR photography – and that I could then sell it to purchase the upcoming D100 or S2pro whilst the S1Pro still had some value. That first DSLR with its no-lag shutter and great image quality served its purpose – it had me hooked! When the Nikon F-mount D100 and the Fuji S2pro were announced, I had a hard time deciding which body to upgrade to, but I decided that the TTL flash-metering and higher resolution made the S2pro a better camera for me, despite the $400 additional cost.

Personally, I've tried to follow a guideline of not buying a new camera until something on the camera doubles – usually this is the sensor megapixels, but it can also be a two-fold increase in lens and autofocus quality (consumer to DSLR) or a cropped to full-frame sensor (S2pro to Kodak ProSLRn). This guideline keeps me from jumping to purchase a new camera that won't greatly benefit my results.

So why did I go to the trouble of switching from Nikon to Canon? The first thing I need to say is that I didn't switch because I didn't like the camera I owned, I switched because I thought I could do better with Canon for the total underwater system of camera, housing, ports, and lenses. To best explain this, I've put together a short list:

Nikon Delays

For underwater use, there isn't an f-mount camera available that is a significant improvement over the D100 or Fuji S2pro. These two bodies are small and light, but they could both use bigger viewfinders and they are "only" 6 megapixels. Fuji has finally started selling their S3pro with great image quality, but it's bigger, has the same viewfinder and is still a 6 megapixel DX cropped sensor camera. Nikon has delayed and delayed the D2x and it's still (at the time of writing) not for sale. It's a big pro camera, but it still has a DX cropped sensor. Nikon hasn't announced a replacement for the D100 yet, and even when they do, given Nikon's track record, it will be 6 months to a year before it's for sale and perhaps even over a year before a housing will be available.

The Nikon D2x has been a long time coming and still uses a cropped sensor

Clear Upgrade Path

Canon's pro camera upgrade path is clear for me, as their 1D series body has not changed significantly since the original 1D was introduced in 2001. Currently, there are four Canon bodies that will all fit in the same housing: the 1D, 1Ds, 1DmkII, and 1DsmkII. I can't currently afford the new 1DsmkII with its 16 megapixel full frame sensor, but I can afford the 8 megapixel 1DmkII. Some day in the future, the price of the 16 megapixel camera will come down and I'll be able to buy one and use it in my housing. The housings for this body are expensive, but the units made by Subal and Seacam are both excellent and I'd expect

Canon full size chip camera bodies have not changed so will fit existing housings

either of them to provide years of service. I think I'll be happily using the 1DsmkII through 2006 – that means a housing purchased for the 1D or 1Ds in 2003 could still be in use 3 or 4 years later – something unprecedented for an underwater digital camera system.

The Seacam housing for the Canon 1DmkII series bodies. Photo Eric Cheng

Camera Body Lineup

Currently, Canon has the consumer 300D, the prosumer 20d, and the professional 1D bodies. The 20D camera is a D100 replacement, with its excellent low-noise 8 megapixel sensor, snappy internal software, and 5 fps shooting ability. I intend to house one of these for my dive buddy to use. A side benefit of switching to the Canon system is that I can use my lenses with their bigger lineup of DSLR bodies.

The Canon 1DmkII and the 20D. The difference in size is dramatic.

TTL Flash Control

With their eTTL2, Canon has finally developed a digital flash system that is on the same level as Nikon's. eTTL2 is a preflash system like the Nikon iTTL, so requires special strobes, but it's been decoded by Ikelite who offers an eTTL2 housing. The housing is small and light and with the eTTL2 circuit and Ike's manual/autofocus port it will be easy to use for great macro photography.

How I Did It

I knew that I was going to have to sell all of my photo equipment as I simply cannot afford to keep two different systems. Surprisingly enough the cost of migrating to Canon was not as expensive as you might think. I was able to sell my Nikon equipment and buy an equivalent Canon system for just over $1400 extra. One of the reasons is that lenses hold their value very well and by using my knowledge of E-bay selling techniques, I was also able to get the "high end" of the fair market value for my equipment. Here are my four tips for maximising your sales on Ebay:

Take good photographs of your equipment: A good photo of the actual item for sale will beat out a stock photo every time. Set up a "studio" using a nice backdrop – you can even use your strobes and diffusers as studio slaves.

Save all the original packaging and include this in your E-bay photo and when you sell the item.

Don't bundle anything. You will actually get more money selling everything individually than if you try to put together a "package deal."

Selling internationally: Since the dollar is weak right now, overseas buyers – especially from Europe – can afford to spend more dollars on camera equipment.

Body Differences

Canon and Nikon bodies are significantly different, so if you switch, the first couple of weeks of shooting will require an adjustment period. I found that the Canon controls were not intuitive, and I actually had to refer to the manual and a few online resources in order to get everything set up the

way I wanted it. I think the same would be true for a Canon owner switching to Nikon – but I want to mention it here so that people know what to expect.

Some significant changes that I noticed right away:

The lens mounts in the opposite direction to the Nikon F-mount

Canon zoom and focus rings may or may not rotate the opposite direction to Nikon

Canon cameras (save the new 20D) have no directional pad. To scroll down through menus you must use a wheel on the back while holding a button down.

Scrolling through menus and making selections requires that you hold a button down and turn a wheel. Then press a different button, release it, then press and hold it while scrolling again, then release on the selection you want. The directional pad is about 100 times more intuitive and ergonomic.

The "wheel" is fast. Rather than push a left or right arrow to scroll through images to review, just rotate the wheel smoothly and quickly with your thumb.

Some buttons you have to press and hold, others you press and let go. For example, press the Flash Compensation/Metering button and turn the wheel and you change the flash compensation. Press the Exposure Compensation and LET GO then turn the command dial to change the exposure compensation.

Sometimes you have to press TWO buttons while turning a wheel or dial. This is something I've NEVER had to do on a Nikon.

No M-S-C switch. If you want to change focus modes, you will have to press buttons or go into a menu. No longer do you have single or continuous focus, now you have AI-Focus and AI-Servo. To learn more about the Canon AF system, check out this excellent article by Chuck Westfall: http://photoworkshop.com/canon/EOS_Digital.pdf

With the 20D, the CF card mounts in the side of the camera, not the back. This is convenient when using the camera in an underwater housing.

Canon calls the AE/AF lock button the "*" button. When set up using the custom function menu on the Canon camera, it can be made to perform any of the functions that the AE/AF lock button can do. On popular use it to set it to AF-ON, in which case, the shutter button has no AF function. When the * button is pressed, the camera locks focus and you can take as many photos as you want, before changing and locking focus again.

Lens Selection:

Because my Fuji S2Pro was a 1.5x cropped camera my Nikkor 105mm behaved like a 150mm. When I upgraded, I took this into account with my macro lens purchases and didn't get another 60mm equivalent macro lens.

Nikon Mount	Canon Mount
60mm	100mm USM
105mm	150mm Sigma
70-180mm	70-200 New
24-85 AFS	24-85 USM
16mm Fisheye	15mm Sigma
17-35 AFS	12-24 Sigma

My Canon underwater lens selection. The 15mm fisheye is not shown as I have not received mine yet : -)

Macro:

Canon offers a 50mm, a 100mm USM, and a 180mm macro lens. Unlike the Nikon 60mm equivalent, the Canon 50mm will not focus to 1:1 equivalent. An option that many are using is the Sigma 50mm DG EX lens which is comparably priced and will focus to 1:1. On the flip-side, the 100mm USM provides better performance than the Nikon as the Canon lens will allow full-time manual focusing. In essence, with the Canon lens you can switch between auto and manual focusing by pressing a button on the camera (the * button), and just grabbing the focus knob, this means that no AF-MF shift collar is needed with USM lenses. I decided to buy a Sigma 150mm f2.8 instead of the Canon 180mm because of the Sigma's faster f2.8 rating as well as the fact that it costs over half as much. I had a tough time finding a way to replace my Nikkor 70-180 macro zoom as Canon does not

have an exact equivalent. What they do have is a 70-200 f4 L lens with USM focusing. When used with a +2 diopter, at 200mm this lens will close focus on a frame 50mm wide (in air) when using my 1DmkII and a field 35mm wide when using the cropped sensor 20D. With the diopter mounted, the lens's infinity focus, yields a 120mm frame when using the 1DmkII and about an 85mm frame, when used with the 20D. This is all at about one foot from the tip of the lens which is great for macro. Since a diopter is used, the infinity focus is about 2 feet from the lens tip, which is fine.

The Nikon 70-180 Micro and the Canon 70-200 F4L. The Canon lens has a removable tripod collar, which is not shown. The tripod collar on the Nikon lens is not user-removable.

Wideangle:

Canon makes a 16-35 f2.8 and a 17-40 f4 lens for use on any camera body. They also make a 10-22mm f3.5-4.5 which will at the time of this writing only work on the 300D and the 20D as it will only fill the image circle for a 1.6x crop sensor, and requires a special lens mount/mirror system. I considered buying the Canon 17-40L for use with the 1DmkII and the Canon 10-22 for the 20D, but at a combined cost of ~$1500, I decided it would be a better idea to get a Sigma 12-24 as it is compatible with both bodies. It's equivalent to a 16-32mm on the MkII and 20-38mm on the 20D. I have read that this lens performs very well if you get one that is aligned properly – Sigma apparently has poor quality control so some of them will show softness on one side or the other. I tried 4 samples at the store and examined the results, then purchased the best one. After testing the Sigma 12-24 in the Seacam Superdome, I think it is as good, or slightly better than the Canon wide zoom.

Users have been reporting that for use on a full frame camera, lenses must be of the highest quality, or the corners will blur. There appears to be a high degree of variability in the Canon wide zooms, with some users very happy with theirs and others disappointed. Canon does not yet offer a full frame fisheye specially designed for a cropped sensor camera, like Nikon has done with their 10.5DX. On my 1DmkII, a 15mm fisheye yields a very wide field of view, but on the 20D it acts much like a wide angle lens of 22mm with a lot of barrel distortion. With the 20D the photos look much like what comes out on film when you use a Nikonos + 15mm. I can't say I'm unhappy with it, but 20D users would sure benefit from a true fullframe fisheye.

Underwater Support

The Seacam housing for the Canon 1DmkII series bodies. Photo Eric Cheng

Underwater support for Canon film cameras has historically been poor. This changed dramatically with the introduction of Canon's digital SLR camera, the D30. It was one of the first digital SLR cameras used underwater because of its price (~$3,000) and because UK-Germany made a compact aluminum housing for it. At the time, the dollar was strong vs. the Euro, so it was possible to order one from Germany for a "reasonable" price. It was certainly considered reasonable when compared to the only other digital competition, the Nikon D1x ($5,000) in a Seacam housing ($5,000). At the time of this writing, here in the US there are three popular housings available for the Canon 1D series cameras (Subal, UK Germany, and Seacam) and four for the 20D (Ikelite, Subal,UK Germany,

and Aquatica). I'm projecting that in the next few months, there will be a housing available from Sea and Sea as well.

This gives a good selection of housings and ports, and the fact that Subal and UK Germany will be making housings for both cameras means that if you go with that brand, you can have one of each in your "dive family" and share the ports.

I haven't yet had a chance to dive with my new Canon system, but based on some dives in the pool, I think I am going to be very pleased. As with every new purchase, right now I feel happy with the "latest and greatest" and I'm cautiously optimistic that it will serve me for years to come.

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INON D2000 and its S-TTL system

By Alexander Mustard

In my opinion this review comes down to one big question. Does the Inon D2000 strobe really provide accurate TTL metering with almost every compact digital camera, without any electronic communication between the camera and the strobe? Yes. It does. This achievement makes the D2000 a very important product for digital photographers, and as a result I have given the product a pretty thorough workout in this article.

The D2000 is the latest strobe from Japanese company Inon. Owners of their previous models, the Z220 and D180, will already be familiar with its rugged shape. All Inon's compact strobes use their T-shaped dual flash system, with specially designed reflectors that produce an even, circular pool of light irrespective of the rotation angle of the flash head. The D2000 is small, lightweight, ideal for travel, and close to neutrally buoyant in water. Power comes from four AA batteries, and although I do not own any Inon strobes, I have used both the Z220 and D2000 and have found them exceptionally frugal on batteries (I did 13 dives in Bali on one set in the Z220). The recycle time of

the Inon strobes is also impressively short, and I have never had any reliability issues in my brief time with them. Anyway, to business! What is new and exciting about this strobe is the TTL system. Nearly every digital compact camera determines its flash exposure by firing a weak pre-flash (after you press the shutter but before the picture is taken). This light is reflected back from the subject through the lens (TTL). The camera looks at how much light has returned and works out how strong the main exposure will have to be - and sets the main flash accordingly and fires it. The D2000 works by surreptitiously taking the place of the camera's own flash, for both the pre-flash and main flash, with the camera unknowingly controlling the D2000 output. Inon

call this system S-TTL, which is short for the catchy "Optical Syncro Through The Lens" strobe metering. The few other external flash systems capable of digital TTL are connected to the camera electronically (e.g. the housed Olympus FL-20 strobe) and because of this they need to be able to speak exactly the same language as the camera. As a result, electronically connected systems can only be used with the specific camera brands and models. The D2000's only connection to the camera is a fibre optic cable and this makes it much more compatible. It sounds strange, but makes more

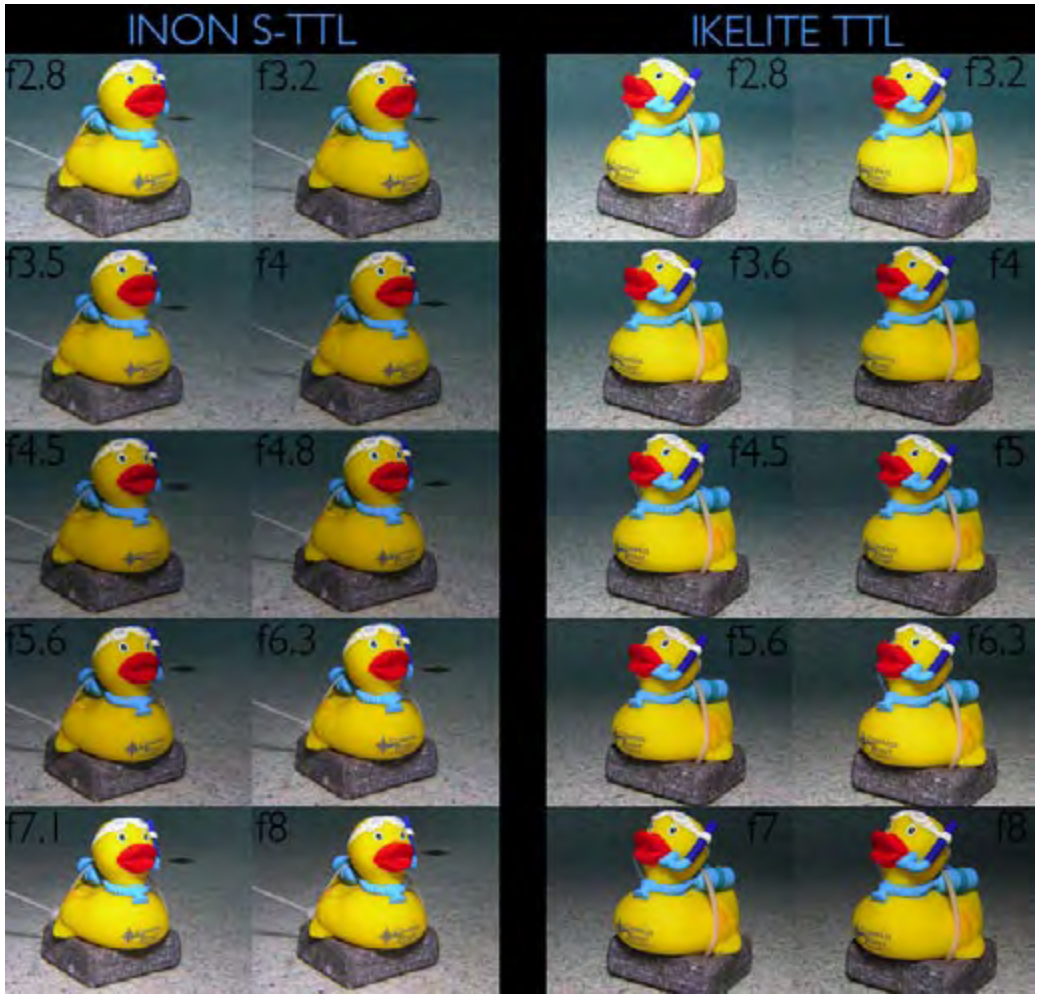
sense when you start to use it. The first step when attaching the D2000 is to block the light from the camera's internal flash with Inon's visible light filter. This filter still allows non-visible wavelengths through which are used to trigger the D2000 via the fibre optic. Now when the camera fires its pre-flash the D2000 detects it and fires a proportional pre-flash too. The camera sees only the D2000 pre-flash and thinks that it is its own (remember its own flash is blocked). From this it works out how much more light is needed for a correct exposure and increases the duration of its flash

accordingly for the exposure. Again the light from its own flash is blocked, but the D2000 sees it through the fibre optic and fires in its place, detecting and mimicking the required increment in flash power. Result: you get the correct exposure!

So, that is the theory, now to put it to the test. For obvious reasons I could not test the D2000 with every compact digital camera on the market, so I chose to test it with one of the most popular the Olympus 5060 in a PT-020 housing. I must say that the red colour of the Inon D2000 looked very smart with the matching PT housing!

Test One: Controlled conditions TTL test.

The raison d'etre of TTL flash metering is to ensure that a strobe gives out the required amount of light for a correct exposure. The simplest way to test this capability is to take a series of flash lit photographs of the same subject at a range of lens apertures. If TTL is working then the strobe will vary its power output to give the correct amount of light for each aperture. If the TTL is not working and the strobe is giving out a constant amount of light then shots that start off correctly exposed will become increasingly underexposed as the lens's aperture is closed. Of course, you can do TTL tests in air, but last time I looked this magazine is called UWP, so I grabbed my rubber duck and headed off to the pool! I wanted to ensure that the lighting of my images was dominated by the strobe light, so I chose the darkest corner of the deep end of the Compass Point Resort pool, in Grand Cayman, for my tests. I also used a fast shutter speed of 1/800th for all the shots. But this is the Caribbean and it is sunny, so even at 1/800th of a second there is still some ambient light influence in the shots (visible as brighter backgrounds at wide apertures). As I am sure you can see immediately the S-TTL performance was very impressive, producing consistent exposures through the range of apertures. By happy coincidence, I was able to simultaneously test an Olympus 5050 in an Ikelite housing, with an Ikelite DS125 strobe capable of Olympus TTL (kindly loaned to me by Barbara Janssen). Ikelite's version of Olympus TTL is only available with their housings and only works when they are used in conjunction with their DS series strobes. The Ikelite housing and strobe are more expensive than the Inon and PT housing but, as you can see from the results, this system works well too. There is a slight over exposure at f2.8 as a result of the strobe not being able to quench fast enough at this aperture.



Rubber-ducky TTL tests. If TTL flash metering is working properly then it should automatically produce correct exposures at a range of apertures. While testing the INON D2000 on an Olympus 5060, in a PT housing (images on the left), I had the chance to do a back to back test with the Ikelite TTL system, using an Ikelite DS125 strobe on an Olympus 5050, in an Ikelite housing (on the right). Note Ikelite TTL is an electronic wired TTL strobe system, and only available with Ikelite housings and digital strobes. I present both sets of images for your information. You can see that both worked very well over the range of apertures. (Note these pictures were taken with different cameras - hence the slightly different aperture steps).

This is more noticeable on the Ikelite because the DS125 is more powerful than the D2000, and is an artefact of the testing conditions and should be ignored.

Test Two: Macro Photography.

Pool tests complete, it was now time to get into the Caribbean and get cracking on some real pictures. Ever since Nikon introduced underwater TTL with the Nikonos V in 1984, underwater photographers have been relying on it for macro photography. Macro images, by definition, represent small picture areas close to the camera - characteristics that mean TTL flash exposure is usually reliable. After the pool tests I was expecting the D2000 to do well. And it did not disappoint producing very reliable exposures both where the lighting was flash dominated and also in balanced light. One very interesting feature of the D2000 is that it has an S-TTL compensation switch on the back of the strobe that allows the user to compensate the flash power relative to the camera's suggested TTL exposure - either brightening or darkening it. The system worked well, and I tended to add some compensation to about 30% of my macro shots. These were only minor changes, usually to suit my taste rather than correcting a wrong exposure. I predict that many users will quickly become addicted to the extra creative control that this feature adds.

Photographers favour TTL exposures for macro because the metering of the small picture area is usually handled easily. This sub-inch long triplefin was the smallest subject I tried with the Olympus. Again the S-TTL did a good job with this flash dominated macro photograph. Olympus 5060. PT-020 housing. Stacked INON UWL 165 and 330 close-up lenses. 1/400th @ F8. D2000 on S-TTL.

Test Three: Fish Photography.

The other area where TTL has always appealed to photographers is in fish photography. TTL is desirable because it means that the photographer does not have to worry about the exposure and can concentrate on capturing the moment with a moving subject. Again I tried both flash dominated and balanced light shooting and the S-TTL performed well, even with the most challenging subjects I could find. I would say that I dialled in S-TTL compensation on about 50% of my fish shots.

A disadvantage of using pre-flash TTL for this type of photography is that it slightly extends the shutter lag before the picture is taken compared to switching the pre-flash off and doing without TTL (this does depend on the camera). This extra lag gives the subject slightly more time to move!

Having successfully tried a flash dominated macro shot, I wanted to see how the S-TTL would cope with a balanced light macro shot. I think that S-TTL has done a most acceptable job here under more complicated lighting conditions. Olympus 5060. PT-020 housing.
Stacked INON UWL 165 and 330 close-up lenses. 1/40th @ F8. D2000 on S-TTL.

For this next image I wanted to find a tricky subject for the TTL: a dark fish swimming over white sand. The S-TTL didn't get it right every time, but in this case, after I had dialled in some compensation, it did a perfect job of this Smooth Trunkfish swimming over the sand. Olympus 5060. PT-020 housing. Standard lens. 1/125th @ F8. D2000 on S-TTL.

I thought that wide angle would be the toughest test for the strobe. I found that I would usually use some S-TTL compensation for these shots, but once dialled in for a particular setup, it did a good job. Olympus 5060. PT-020 housing. UWL 100 with dome port. 1/8th @ F8. D2000 on S-TTL.

Test Four: Wide Angle.

Even back in the days when everyone was shooting film, TTL was not universally favoured for the complexities of wide angle lighting. I have to admit I always used TTL, but I felt that wide angle would be the biggest test for the D2000's S-TTL. In actual fact this is more a test of the camera's flash metering capability rather than the strobe. It is important to remember that the S-TTL is only as good as the camera that controls it. And some compact cameras have better strobe metering than others.

I found that I used the S-TTL compensation control on most of my wide angle shots with the Olympus. I admit that this was mostly fine tuning, but I think that photographers who are fussy about their lighting will find that they do the same. I must also add that I found the S-TTL compensation system very easy to use and I got pleasing results immediately with this camera (this image of the diver in the cave is from my first morning with the camera and strobe, taken before I had done the pool tests). Throughout these tests I was using the Inon strobe without a diffuser and as such its coverage is about 100 degrees. Normally this is fine for wide angle because we rarely want to light the whole scene with flash. Instead we concentrate on lighting the foreground and not worrying about the open water at the top of the image. The example image of the diver in the cave is unusual in this respect and therefore shows some strobe fall off towards the corners of the frame. I would recommend using a pair of D2000s for this sort of shot. Actually, I prefer to have two strobes for all my wide angle. I did not have two D2000s with me in Cayman, which would have allowed me to shoot dual strobe S-TTL. Instead I made use of the fact that the D2000 can be switched into manual (non-TTL) mode and the camera into non-pre-flash mode. This meant that I could fire any underwater strobe as a slave from the D2000. If the pre-flash is not switched off then the standard strobe will be fired by the pre-flash, not only ruining the pre-flash metering but also it is unlikely to recycle in time for the main exposure. I used one of my Subtronic Alphas as a slave strobe with the D2000 on most of the dives I made and this combination worked well (I haven't included these images in this review because they were shot without S-TTL).

General features of the strobe.

My only big gripe with the strobe is the very complicated multi-function control dial on the back. The Inon engineers have been very clever and made this single dial on the right hand side of the back of the D2000 capable of controlling TTL compensation in S-TTL and S-TTL-low modes, as well as communicating your aperture to the strobe in Auto mode and also for determining flash power in Manual mode. But this also makes it very complicated, especially as the starting places for the different modes are in different places on the dial. I do not want to sound overly critical here because I realise that owners of the strobe will quickly become familiar with its functions, as I did, but the first time I used the strobe it was like trying to figure out Rubik's Cube. Underwater! Early purchasers of this strobe were further frustrated by a lack of an English Manual when this strobe was released, although Inon has subsequently distributed it to them.

The fibre optic cable is one of my favourite features of this strobe because of all the potential hassle it saves since it is does not rely on electrical connections and is impossible to flood! When I used to use TTL with my housed Nikon F100 I would have to worry about 40 electronic connections between the camera's hot shoe and my strobe. The synch cable also represented potential flood points of both the housing and strobe. The fibre optic solves all these worries, but it is not perfect. First I found the cable a bit too short for some strobe positions. Also because the D2000 is only fibre optically controlled it does not offer as flexible a camera upgrade path, as say a Z220, which can be fired both fibre-optically and electronically. It

Fish photography has always been a popular area for TTL because it frees the photographer from worrying about exposures when trying to capture "the moment". The INON D2000's S-TTL took care of the exposure to all I had to concentrate on was pressing the shutter at the right time to capture the gaping mouth of thisSpotted Moray Eel.
Olympus 5060. PT-020 housing. Standard lens. 1/400th @ F8. D2000 on S-TTL.

is possible to use the D2000 with Nikonos style connectors, and it is capable of Nikonos-style TTL, but you must purchase Inon's Optical Converter, which is quite expensive. Another point of interest about the D2000 is that the flash duration is much shorter than other similarly powerful underwater strobes. This is helpful to the digital underwater photographer because it allows us to shoot fast shutter speeds with digital compact cameras without loosing flash power. I'll explain why this is important. A disadvantage of digital compact cameras is that most have a smallest aperture of F8, which can be frustrating when trying to control the influence of available light in images

A picture of me with the camera rig I used for these shots. Photo byJoe Hoyt.

(for example when we want macro shots with black backgrounds). Fortunately, most of these cameras have electronic shutters, and therefore can synchronise with the flash at any shutter speed. So we can control ambient light by using fast synch speeds (>1/500th). However the problem with this approach is that at synch speeds in excess of 1/500th most underwater strobes do not have enough time to fire all of their light. As a result at faster and faster shutter speeds the strobe underexposes more and more. The short flash duration of the D2000 is thus advantageous because it offers lots of light at fast shutter speeds. Finally I want to comment on the focus assist light that does not turn off during the pre-flash and therefore must be fitted with a red filter to stop it interfering with the flash metering. Personally I don't see this as a big problem. What is more of an issue is that accuracy of pre-flash metering can potentially be affected by other light sources, as with the focus light (this is an issue with the camera and not the flash).

S-TTL Compensation.

In my tests, I found S-TTL produced great results much of the time automatically, as I have said above. When S-TTL didn't work or I was feeling fussy/creative the TTL compensation control allowed me to easily adjust the lighting to my tastes. The way that S-TTL works is to sense and then exactly duplicate when the camera's own flash switches on and off (both for the pre-flash and again for the main flash). When we dial in S-TTL compensation all we are doing is telling the strobe to burn a bit longer than the camera tells it to when we want to brighten the exposure, and to start its flash a bit after the camera says when we want to darken the contribution of the strobe.

I believe that most photographers will end up using the TTL compensation on many of their shots because it works so well. My only issue with this is that if this is the case then they didn't need TTL in the first place. They might as well be using a manual strobe. I accept the point that TTL is a nice tool to have in the box, and the TTL ability of this strobe is what a lot of people have been asking for. But if you are going to use your own inputs to get your desired exposure then the best starting place is the fixed output of a manual strobe, rather than the potentially changing output of a TTL strobe. Again, I would temper this comment by re-stating that this is a personal opinion and of course the D2000 can be used as a manual strobe.

Conclusion.

By far the most important feature of the D2000 is that it offers a reliable TTL system that works with almost every digital compact camera and housing. It is compact, strong, powerful (yet frugal on batteries) and promises to continue to build on Inon's reputation for reliability. The controls do take a bit of getting used to, especially if you switch modes during a dive, but once you have it is very easy system to use. For the beginner it offers the simple automation of reliable TTL flash. For the more advanced photographer, who wants more creative control, the D2000 gives it to them, both as compensation for the TTL and full manual control. The D2000 is an innovative and capable product, and it is one of the few on the market that will really grow with you as a photographer.

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Underwaterworld

by Pete and Aleta Saloutos

My love of water goes way back: swimming lessons as a kid, surfing as a teenager, swim team in high school. Thirty-five years ago I got certified for diving but never really got behind it. At that time, the equipment was primitive by today's standards. Ten years later, well into my life as a photographer, my interest in diving was rekindled when I began to experiment with a Nikonos underwater camera and lights. For the next several years, I had great fun with colorful shots of swimmers using multiple lights and gels.

In 1984, my world of underwater photography came to an unexpected and abrupt end when I began to suffer massive headaches after even a minimal swimming experience. If I couldn't swim, it was clear that diving was out of the question. For the next seventeen years I tried to figure out what was wrong: I visited neurologists, acupuncturists, chiropractors, massage therapists: you name it, I tried it, but to no avail. I had CAT scans and MRI's. Still nothing. So I eliminated water from my workout horizon, using its remembered rhythm only as a way to relax myself to sleep. I did keep running though, which was my other long-time fitness/fun habit.

It wasn't until I pulled first my left hamstring, then my right a week later, that I made a reluctant decision to give up running as well. Faced with the impossible situation of no cardiovascular exercise alternative, I tried slowly reintroducing swimming into my life. To my incredible joy and surprise, there were no more headaches. It seems my running was the trigger for my headaches all that long time.

Why do I include this saga of loving, losing, then yearning for and reclaiming the water? Perhaps because it's important to remember that nothing is lost when our lives take us in a different direction than we plan. During those many years when I thought I could not swim, I spent all of my photo time learning and pushing the limits of corporate and advertising photography. My work for clients became more and more complex, requiring upwards of ten power packs and twenty lights for a single shoot. I mixed strobes with tungsten and ambient sources; I pushed the envelope whenever and wherever I could. When I finally re-entered the pool as part of the Master's Swim Program in my hometown, my brain took all those experiences, laid them out like so much track and my photographic wheels began to turn.

Fast forward to my new life in the pool and the photographs presented here. All of these images

originate at indoor and outdoor pools in the Seattle area. My land experience in photography allows me to take the techniques I've mastered on location and in the studio and apply them underwater. In several of these shots, there are four of us in full scuba gear, each person with an Ikelite strobe and sync. I use a Nikonos 5, usually with a 35 mm 2.5 Nikkor lens. I like the perspective and depth of field that the 35 mm lens gives.

Once Nikon releases its new D2X and Ikelite makes an appropriate housing for it, I'll switch over to a digital format, but for now it's film, mostly Kodak E100VS, which supplies excellent color and sharpness. Having had extensive opportunities to use strobes on land has given me an intuitive sense of what will bring my exposures close to target underwater. For this reason, my exposure technique is based on trial and error. I'd rather underexpose than overexpose; since I'm using E100VS, I can push it effectively with little contrast build up or color shifts. I snip test while processing, so this type of modification is always available at the lab to help me nail my exposures.

If you wonder what happens above the water during a shoot, I've usually orchestrated two Norman 2000 water power packs and four to six heads, with and without soft boxes. These lights are dialed way down, with each head commonly set at about 50 watts of power. By contrast, when in the water, I'm using between 100 to 200 watts per head. Each of the underwater assistants is holding either a 200 or 400 watt Ikelite strobe and flash sync. The land strobes need less power because they are providing backlight.

Despite first impressions, I don't always try to make my underwater shots as difficult as possible. The subject itself may imply a less complex

approach: my pregnant nudes, for example, are usually shot with daylight as my primary or exclusive light source. I do warm up the shots with a gold reflector or add six points of red/yellow in Photoshop, when appropriate.

Typically, I have two assistants out of the pool working lights and changing film. All of my subjects are not only experienced in the water, they are first rate in their fields: swimmers, divers. The synchronized swimmers are especially amazing because they can stay underwater for such long periods of time and make it look so easy, smiling continuously doing the whole shoot!

How does a typical underwater shoot translate into what the photographer does below the surface? The pregnancy shots are a good example. I find that having the sun at roughly a 45º angle works best for this type of shooting. I actually hold my breath during each individual underwater sequence. Typically, that means I stay down for about 45 seconds without air in my lungs while wearing an eight-pound weight belt. No air may seem excessive or crazy, but it's not. I do it for two reasons: 1) I don't have to deal with bubbles, and 2) to stay down with a full breath of air would require a sixteen-pound weight belt, too heavy to move with. My assistants hand hold fabric to create the appropriate surface area, texture and intended movement for the shot. Once I'm in the water, I stay there. I ascend and descend, but do not get out. My deck assistant(s) change my film and always lube the camera back after each roll is removed.

My exposures cluster around 1/30 sec. at between f5.6 and f8. I like a little curtain drag on the film, as it gives the shot more movement and color. I use gels over all my strobes: double straw seems to work best for me to warm up the otherwise cool underwater skin tones. When I'm shooting with strobes (the underwater dive shot is a good case in point), I use a Nikon 105 on my camera as my synching strobe. It provides no direct light on the subject; rather, it is usually aimed at one of my underwater assistant's strobes to set it and its companions off.

Shooting divers is very tricky. Above water, the dive coach relays signals to me with a clipboard held underwater telling me when to expect the next diver. In order to keep the flow going, three or four divers work in succession. They get into a rhythm, just as they would during practice or a swim meet. The most challenging part of capturing a diver on film is to get all of the underwater crew in optimal position. I determine where the best place is to put my strobe handlers and when to hit the shutter. Those of us underwater mirror the rhythm of the divers as we synchronize our movements and responsibilities. Again, my exposure is often set at 1/30 sec. from f5.6 to f8, where I can see the movement I prefer.

My two synchronized swimmers must practice their moves repeatedly before we shoot. They then empty their lungs, go down to the 12' pool bottom and slowly begin to ascend while making their moves. I have assistants with me, each one managing a light. We ascend right along with the swimmers. This type of shoot has many potential problems, as you might imagine. For the image you see here, I spent an hour with the

swimmers and shot three rolls of film: 90% of the frames were bad. In my opinion, getting edgy results requires lots of failure; playing it safe yields only static results.

For me, these underwater shots represent a whole new world to explore. Prepping my equipment and packing it into my car from my studio equipment to get it to the pool requires an entire day of grunt work. Then there is getting it out of the car and into the facility. After two hours of shooting in the pool. I'm exhausted but exhilarated. There is no better time to appreciate my wonderful assistants than when they break down then carry all that gear back into the car while I creep around, waterlogged and weak. None of my underwater shots would be possible without their exceptional help, as well as the expertise and support of the great folks at www.exoticaquaticsscuba.com and www.Southern-Nikonos.com.

I'm having lots of fun in pools, but recently I've started thinking it's time to branch out. My next group of underwater models will be the jellyfish of Puget Sound: no model releases, no pay, but then they don't take directions well either….

Pete and Aleta Saloutos
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The Real Deal - Palau

by Tim Rock

Stretching more than 100 miles from tip to tip, Palau is called one of the world's seven underwater wonders.

This rich archipelago in the southern part of the northwest Pacific Ocean has become known as a diving haven that attracts scuba buffs from all over the world. The anchor of a geographic region called Micronesia, it is part of a rich triangle that includes the Philippines, Papua New Guinea and Palau in one of the most diverse undersea places on Earth. The coral reefs, deep dropoffs, sheer walls, enclosed marine lakes, wartime shipwrecks and a plethora of other marine attractions make this a place that any skill level of diver can enjoy.

Palau has both land-based diving and live aboard. The live aboard scene is for the hardcore who want to dive, dive, dive in the south at the walls and coral gardens. The land-based people get two to three dives daily and have fun at the nightlife in town. Palau's restaurant scene is good with varied cuisines to include Thai, Indian and even Italian so it makes for an enjoyable way to see and meet the local people. There are local photo pros who know where the critters are and can do excellent guiding on the live aboards and at the better land-based dive shops.

Palau has been a leader in regional conservation and programs to protect the reefs in general and the grouper and shark populations in particular are seen as model programs for the world to follow. The leadership of Palau President Tommy Remengesau has brought Palau to the forefront in the banning of shark finning, a practice that threatens the very existence of the upper end of the ocean food chain. The government has seized and burned tons of shark fins and declared fishing for sharks in Palau territorial waters illegal. Many international conservation and reef research programs and facilities are based or maintain offices in this progressive and aware community. Palau's array of Rock Islands (more than 700) is also a natural wonder. Palauans created the first nature preserve in Micronesia in the late 1950s establishing 70 Islands Conservation Area.

The Rock Islands in southeastern Palau - D100, 24-120mm lens w/polarizer.
Right. Diver along a steep Angaur Wall (D100, AD100 Housing, 10mm Nikkor Lens, Twin DS 125 strobes

The big attractions in Palau are the wall dives, and there are a bunch of them. For photographers, most of these dives are considered wide angle territory. There are also lots of sharks and turtles, so lenses ranging from 24 to 50mm or a zoom work well for portraits. I use a Nikon D100 in an Aquatica housing and use the new 10mm fisheye for walls and for getting in close to big fish schools.

The water is generally clear and the use of strobes, in my case Ikelite DS 125s, at half or quarter power is all I need to bring out color in most cases. The topside scenery and sandy beaches are also great for half-half work, again getting the 10mm a good workout. Select a high incoming tide and overhead sun for the best half-half results and work your subject close. Topside scenery in the Rock Islands is also great for above water work. Bring a polarizer for that.

The entire southern part of Palau has sheer dropoffs falling to 300m or more. Divers get there generally by taking an awesome trip through the Rock Islands to the legendary islands of Ngemelis and Peleliu. Here, submerged points at current-fed sites allow divers to see the ocean at its finest. Shoals of jacks, snappers and rainbow runners course the reef. Dozens, even hundreds, of gray reef sharks patrol the dropoff edges. Eagle rays, giant groupers, sea turtles, shoals of blackbar barracuda and lots of other desirable critters are found daily along the top sites. Reef fish number more than 2,000 species and include everything from pygmy seahorses to large Napoleon wrasse.

Must-do dives

Blue Corner

Lenses - There lots of marine life here but most people go for the big stuff which means sea fans on the walls, schools of fish and sharks. Use the 10mm Nikkor for the walls and barracuda & jack schools. Use a 35mm or zoom for the gray reef sharks which can come portrait close at times. There are even some orangutan crabs in the bubble coral near the Blue Holes for macro freaks so a 55mm macro lens will also work.

Gray reef shark at New Dropoff. (D100, AD100, 17-35 Nik zoom, Twin DS 125 strobes)

The Dive - This is one of the world's best boat dives., A true corner jutting out into the sea, this place is very nice when the tide is slack and spectacular when the current is moving. Consistently active, see whitetip, nurse and gray reef sharks on the move. There are tame Napoleon wrasses, big schools of fish and turtles. While the big stuff is the major attraction, there are many cleaning stations here and everything from barracuda to pyramid butterflyfish come in for a stop. Great for fish photographers to capture behaviour images.

New Dropoff

Lenses - Again good for sharks and schooling fish 10-15mm lenses and also a portrait lens for fish like eagle rays and Napoleons that may come in close.

The Dive - Once upon a time, New Dropoff was a new site, but it is now firmly established and known to many as the "other" Blue Corner. The action here can also be fast and furious at tide change. This site actually has a couple of fingers rather than a pronounced corner and barracuda can often be found at one, sharks at the next and perhaps eagle rays at the next one. It's a great spot to use a reef hook and watch the action.

Boarding Ocean Hunter 2. (D100, AD100 Housing, 10mm Lens, DS125 Strobes)

Manta at Devilfish City (D100, AD100 Housing, 10mm Lens, Twin DS 125 strobes)

Devilfish City

Lenses - Definitely 10-15mm use here for big mantas that come in to clean. The rock at the cleaning station is also colorful and there's a school of sweepers.

The Dive - A northern site, this place is a cleaning area for a pelagic group of manta rays that come in through the nearby pass and like to come in to a colorful cleaning station. They are preened by small wrasse and butterflyfish that come up from the sea whips near a couple of large rocks. This place is best when the tide is moving as the mantas may clean and feed at the same time.

The tranquil water deep in the Rock Islands near Jellyfish Lake. (D100, AD100 Housing, 10mm Lens, Twin DS 125 strobes)

Peleliu Tip

The Lens - Shark people love it here so anything from a wide lens for the beautifully adorned walls to a fish portrait lens for the numerous gray reef sharks and even bigger species.

Sea whips at Turtle Wall - (D100, AD100 Housing, 15mm Lens, Twin DS 125 strobes)

This place can also produce a billfish but currents here can be a hardship for photography once past the tip.

The Dive - Located at the southern tip of the archipelago, this site produces pelagic sea life like sailfish, great hammerheads and even a tiger shark

or occasional marlin. It is located at the southern tip of the archipelago where two big currents meet. Consequently, lots of big stuff meets here as well. The Peleliu Wall leading to the tip has beautiful soft corals and sea fans. When the current is strong, this dive is not for the faint of heart.

German Channel

Lenses - There are mantas to be seen here, so bring a wide lens if you want to get shots of them. But this area is good for macro in the lush corals, A 50 to 60mm lens will capture disco clams, leaf fish and egg-laying cuttlefish.

The Dive - This place is a seascaped coral garden. A narrow channel and shallow area highlighted by coral-covered bommies empties into a deep bay between two southern islands. At the sandy dropoff is a manta ray cleaning station and sharks and even whale sharks have been seen here. It is an excellent night diving area with leaf fish and electric scallops.

Siaes Tunnel

Lenses - Adorned with black coral and fans, a 10mm fisheye can be used to capture the enormity and beauty here. But, there are rare fish here so a macro lens can also be a rewarding piece of glass.

The Dive - The "tunnel" is a gaping hole in the sheer wall that extends high and deep back into the reef. Three windows to the sea are adorned in black coral at he top, white coral on the sea floor and lots of gorgonian sea fans. Look for sleeping sharks and roaming jacks inside the tunnel and pygmy seahorses on the Muricella fans outside the cavern.

Palau's famous Rock Islands (D100, AD100 Housing, 10mm Lens)

Iro

Lenses - This is 10 to 15mm wide country for the big guns, masts and other beautiful ship parts now adorned in marine life.

The Dive - Not as famed for its wrecks as it should be, Palau has over four dozen W.W.II ships and planes resting on the sea floor. The Iro is a large converted freighter that was sunk while at anchor. Razor clams, batfish and sea anemones are prolific on the ship.

Jellyfish Lake

Lenses - To get many jellies in one shot, bring the superwide and a nice model. But there are small anemones here as well. Few people try macro here but the marine lake life can produce some rewarding shots close up.

The Dive - Palau is famous for having more marine lakes than anywhere else in the world. Most

Sunset at the Rock Islands near Metyuns ((D100, 80-400mm VR Lens)

are extremely hard to get to or are protected. But one that can be visited and enjoyed is Jellyfish Lake, home to literally millions of non-stinging jellyfish in two species. Go there when the sun is strong to be able to swim through the clouds of jellies that gather to get energy through photosynthesis.

Jake Floatplane

Lenses - Go wide here with a 15mm or wider. This plane is wonderfully intact and wide works well, even for the razor clams under the wing.

The Dive - This plane is in great shape, in shallow water and has a nice reef around it. Few W.W.II era floatplanes that were sunk during air raids are found upright and with their floats intact. So this one for that reason alone is special. The glass is still in the cockpit windows and there's even a nice growth of encrusting sponges and razor clams under the wings. The take time to also explore the nearby reef and look for a school of squid as you

Jim Watt checks his gear aboard the OH2 at the dedicated camera table. (D100, 12-24mm nikkor)

head back up the buoy line.

Also consider:

Chandelier Cave, Short Dropoff, Big Dropoff, Ulong Channel and Helmet Wreck

Getting to Palau: Fly to Guam or Manila and connect with Continental Airlines to Koror. Soon, Palau Micronesia Air may also be operating through the same hubs. If coming through Guam, there's the option to stop in Yap for some good diving as well.

Best season for diving : December through June but actually good most of the year. Water temperature : 2 6 - 30C

www.visit-palau.com

Dive Operators
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E-mail: fishnfin@palaunet.com
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Lough diving in Connemara

by Jerome Hingrat

Often fished but rarely dived, Connemara loughs are bog diving territory at its best.

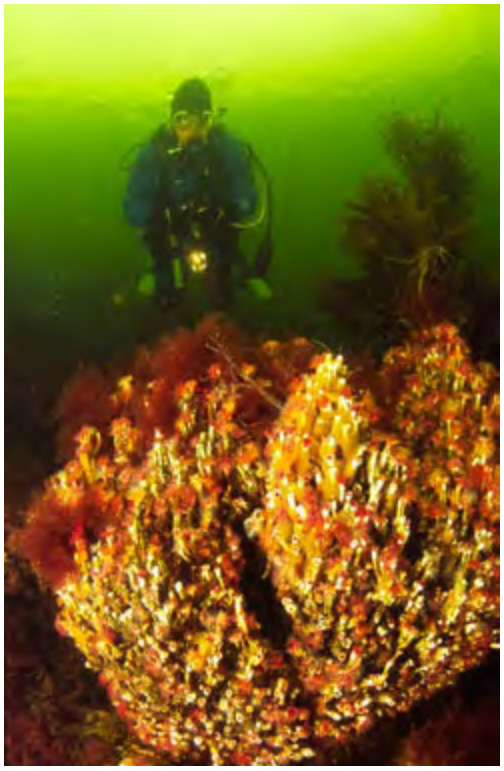
Sliding into brackish water riddled by a seasonal downpour might not be everybody's idea of a week-end in the Wild West...but for the frustrated winter diver that I am, there is sometimes nothing like the peaty waters of Connemara.

Connemara loughs are like proverbial watering holes: there is no shortage of them. Water is not a rare commodity around here, above and below, out of the heavens it comes in every colour, salted, fresh, not so fresh or with a seasonal Guinness tint. In late summer, a plankton bloom and peat water conspire to create visibility averaging chowder-like conditions. To cap it all, clouds of jellyfish pulsating by don't help improve the visibility. What a contrast with the clear waters of the Atlantic nearby!

Fed with seawater and fresh water from nearby rivers, sea loughs can bring together an odd mixture of life resulting from the interchange with the sea. A slight current is noticeable with the tide and water clarity can improve. It is a great spot for watching feeding shoals pass by. Shoals of garfish and rainbow trout are not uncommon. Depending on their relation to the sea, some loughs seem deprived of any visible life, others are just teeming with it. With sea loughs, a layer of brackish fresh water sits over the layer of salt water. In the summer, as the sun filters through the surface, the water takes on an eerie post nuclear glow. The surface halocline acts like a filter and blocks off daylight, soaking up whatever sunshine dares find its way over Connemara.

Nikon F90X - 28-105 mm zoom lens on 28 mm - polariser, grey grad, tripod - Velvia - f22

Moving along the shallows reveals a sandy bottom of broken shells and gravels. Not the typical mud plain. Beyond the shallows brings you into deeper waters, and in some areas the slope falls sharply into over 20 metres. With limited visibility, many dwellers are camouflage experts and blend in with their environment, it takes a while to adjust and spot them.



Nikon F90X in Sea&Sea housing - 16 mm fisheye - YS 350 & 120 strobes with diffusers on TTL - Provia 100 ASA - f5.6 @ 1/30

A lot of these mud hoppers are more curious than their sea counterparts, they come out to gawk at the tourists and hop out of reach.

In places, tubeworms have congregated in huge numbers and developed into full-grown reefs. Clumps of red, orange, yellow and white serpula (tube worms) are fanning themselves in a gentle current. This is the closest I've seen to an underwater Christmas tree.

Nikon F90X in Sea&Sea housing -16 mm Nikkor fisheye - one YS 350 strobe with diffuser on TTL - Provia 100 - f5.6 @ 1/60

Right. Nikon F90X in Sea&Sea housing - 60 mm macro - one YS 120 strobe with diffuser on TTL - Velvia - f16 @ 1/125

Sitting on a hard base of white tubes, they stand out against the muddy lough bed. At feeding time, with the reefs in full bloom, the bottom suddenly comes alive. At first, the idea of taking photographs in these conditions seemed fanciful. Divers have been known to miss the reefs because of the low visibility. Each individual specimen of tubeworm, when extended, is no more than 2 cm wide. It's a difficult subject that tested anybody's macro skills - I first tried to isolate the worms and used a 105 mm lens for the added distance from the subject. But the lighting had to be spot on (small subject, low visibility), and tubeworms didn't allow the use of a spotlight. In low light conditions, it's tricky to pick the right specimen and compose with no spotlight. I also mounted diffusers on my strobes to soften the light. This reduced the flash output. After a roll of shots with average exposure and some backscatter, I decided to get closer using a 60 mm Nikkor macro lens. I also pre-set the lens to stop it from the travelling the length of the barrel, this is possible with the help of a switch on Nikkor macro lenses.

The reefs are very much alive and support a variety of animals. The colonies of tubeworms act as a magnet for several species and diversity is the order of the day. Sleepy edible crabs are found nestled among clumps of tubeworms. Starfish and brittle star sit atop or in the centre of the reefs when they are not crawling their way

Left. Nikon F90X in Sea&Sea housing - 16 mm fisheye - Provia 100 ASA - f8

Nikon F90X in Sea&Sea housing - 60 mm macro - one YS 120 strobe with diffuser on TTL - Velvia - f16 @ 1/125

across clumps of colourful umbrellas. Further along, the reefs are covered with strings of sea squirts in the shape of light bulbs. In places, various weeds and sponges appear to smother the colonies of serpulids, each species competing for space. It seems that the tubeworms colonies have been themselves colonised.

Fish are not lacking either. Blennies and dragonets are hopping along the muddy bottom, rock cook and wrasse hover around feeding. Blennies are unused to divers and faced with less predators than in the sea. In any case, they show real curiosity, attracted by the whirr of the auto focus - a few oblige by posing. May coincides with nest building for wrasses and the reefs are a busy hive of activity where wrasse can be seen carrying along seaweed twigs. Futher along, the reefs have eyes. Scallops are glued to the reefs. Some are attached to glowing pieces of orange sponge or wedged in a crack. Smaller scallops and mussels are buried in many places. They can be hard to spot and it's only after getting close that you'll make out their tiny eyes. Other striking residents are nudibranchs sliming their way across the reefs.

Further along three lobsters have found a home at the base of a large clump of tubeworms. One of them pops out of its den wielding a pair of claws like garden shears. But they're not all the stay-at-home variety. We turn round to face an even bigger specimen trampling the muck. Amazingly, the old beast keeps a steady course. I have to make way as he retreats into a hole hindered by two oversized claws. Eat your heart out Popeye! If the size of these animals is an indication of the nutrients available, then the grub here is five-star.

In June, nudibranchs and sea hares enlaced in amorous embrace have colonised the reefs. They are obviously thriving in this environment. It is difficult to imagine all these animals surviving on the muddy lough bed. The reefs provide a habitat for these species that would

Nikon F90X in Sea&Sea housing -16 mm fisheye - one YS 350 strobe with diffuser on 1/2 power manual - Provia 100 ASA - f5.6 @ 1/60

probably not be found here otherwise. Watching these animals will test your buoyancy and breathing control. Serpulids are extremely sensitive to any light, noise or vibrations. The slightest disturbance and the colorful beasts retreat in a wink. Unlike critters that dart away and never reappear, the serpulid worms are soon out again. They cannot leave the reefs, they are the reefs, and I have aged taking photographs of them!

Deeper, the atmosphere can be downright spooky. Light penetration is minimal and on cloudier days, almost non-existent. Past 20 m, we might as well be diving in a tunnel. A halogen torch cuts through the first meters of water shrouded by plankton and particles. Looking up, the surface is a faint glow. On a sunny afternoon, we hit 25 m of complete darkness in the centre of the lough. I had never been on a night dive in the middle of the afternoon before. Definitely one for the logbook.

In contrast with the colourful reefs seen only a few minutes earlier, the bottom is a plain of mud. The lightest fin kick raises a cloud of soot-like dust. The kind of particles that stay in mid water and take all summer to come down. To capture the reefs in full bloom, a 16 mm full frame fisheye is ideal. My first attempts with a 17-35 mm zoom resulted in too much backscatter. So I switched to a full frame fish eye. With limited visibility, this lens allow to get in right close to the colonies of tube-worms. I also fitted diffusers on the YS 350 and YS 120 strobes. They help reduce bascatter. Finally, because of the huge angle covered , it's easy to get flare on either side of the lens. I used long arms extended to about 120 cm on either side of the housing.

Back to the shallows, sun rays passing through the surface weeds create ghostly silhouettes. After persistent rain, water droplets float on the surface trapped in an oily film. Run off from the land give the surface a milky appearance. Within the last five meters the separation line between the layers of sea and fresh water becomes visible. A horizon line runs below the surface. Looking up from 10 metres, the surface seems to have doubled up into two layers. Crossing the layers is like going through an optical illusion. I wonder if I haven't gone cross-eyed. A bit like looking through a magnifying glass that won't focus...After heavy rain, the halocline can be seen up to 5 metres deep.

Jerome Hingrat
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Right in the eye!

Experimenting with super-wide angle

by Will Postlethwaite

I had just finished a muck dive with Kungkungan Bay Resort in the Lembeh Strait and when I got back onto the boat all the photographers were asking me why my strobes were so far away from the camera and subject? Was I mad? Did I have no idea? (maybe they were right!) When I explained that I was using a fisheye lens they were still not impressed and were just even more convinced that I was mad and had no idea what I was doing. At least, however, they now understood my strobe positioning.

I have to admit it does seem like madness but that is part of the reason I was trying out the lens in this situation. A number of factors had led up to me using the fisheye on these dives and rather than waffle on around them I thought I would list them below;

1.Ever since I started to shoot digital underwater I have been tempted to experiment and, inspired by Alex Mustard and his talk at Visions 2004, I wanted to break a few rules for myself.

2.I have had to listen to film photographers talk endlessly about the fact that digital is fine for macro but it cannot handle wide-angle or contrast. For me it is not a debate worth having. I think the complete opposite is true and, if I have learnt anything about the arena of digi underwater, it is that everyone has their own ideas and ways of doing things. All are just as valid as each other.

3.I love the Nikon 10.5mm fisheye. I think it makes great wide angle available to everyone and it is not an expensive lens. I know Peter (Ed.) thinks the same of the INON auxiliary lens. Both focus to almost

Top. Snake eel and shrimps 1/80th f5 manual AF-S closest subject. "It is tempting to bury yourself with the subject!"
Nikon D70 and 10.5mm in an Ikelite housing, 2 Ikelite DS125 strobes with eV controllers. One slaved, ISO 200, White balance auto, Contrast auto, Sharpening auto, Adobe RGB

Right. Octopus in a shell 1/60th f6.3 aperture priority AF-C dynamic area "Touching the dome!"

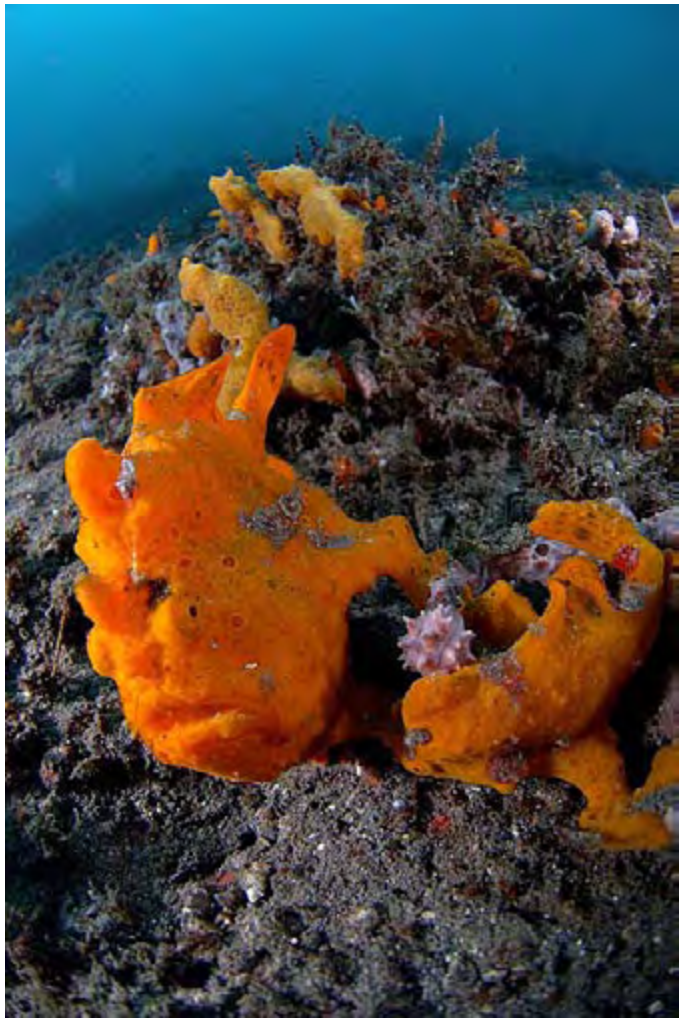
on top of the port, the Ikelite is very compact, and inspired by Charles Hood's "on the dome" shots I wanted to try something similar myself.

I am a bit bored of macro and especially in Lembeh where the debate is 60mm, 105mm or +4 dioptre? All with the same lens we all take the same shots. David Doublet was in Lembeh last year with an endoscope! Dare to be different.

The basis behind the images I was trying to achieve is three fold. We have all seen the weird and wonderful creatures of the Lembeh Strait captured by the world's best photographers but always macro and if you have not been you cannot really imagine what context or environment they all inhabit. I wanted to rectify that if I could. Most macro struggles to give an idea of size and explaining using your little finger nail is somehow unsatisfactory. I wanted to see if I could give the creatures dimension. Lastly and most importantly I wanted to make the images seem more 3-D, have some depth, and also impact.

There a number of reasons why having a digital camera makes this type of shot more accessible than with film, the major one being the instant review. When focusing on a subject only centimetres from your dome lighting is critical and here not only are you trying to light your subject but the immediate surrounds and at the same time balance that with the ambient light of the whole scene. Getting areas dark or hot or blown out is a real problem but when you can see your image on the LCD straight away you can deal with that on the spot rather than when you get home! Using the *highlights* and *histogram* screens can help too.

The great depth of field afforded by the camera and also the lens allow you to shoot in such potentially low light situations without much loss of



Two orange frogs 1/80th f6.3 manual AF-S closest subject. "Dark days are difficult"
Nikon D70 and 10.5mm in an Ikelite housing, 2 Ikelite DS125 strobes with eV controllers. One slaved, ISO 200, White balance auto, Contrast auto, Sharpening auto, Adobe RGB

Stargazer 1/100th f6.3 manual AF-C dynamic area. "Tell a story.'He's going to be eaten!'"
Nikon D70 and 10.5mm in an Ikelite housing, 2 Ikelite DS125 strobes with eV controllers. One slaved, ISO 200, White balance auto, Contrast auto, Sharpening auto, Adobe RGB

sharpness even at wide apertures such as f4. With film I would always avoid shooting at f5.6 or less as I found colours generally looked washed out but I have taken images with the D70 on f2.8 and not been disappointed. So low vis. and black sand were no obstacle although on overcast days the lack of ambient light created some problems with the overall image.

Shooting in raw format allows you a great deal of leeway post shot, which I found extremely useful for these shots. Adjustments to white balance, fine tuning exposure and sharpening all are invaluable raw tools. I feel shooting in jpeg is like trying to walk with only one leg when you have two but, again, there are many views on this.

Since switching to digital I have not found the loss of TTL at all distressing. In fact with fine adjusting strobes and instant feedback I have found that the manual control allows perfect exposure of situations, like a white frogfish on black sand, where TTL would struggle. Indeed the talk of inability to deal with contrast I almost find the opposite being true! Even sunbursts are not a problem if your camera has an electronic shutter like the D70 and all compacts. Just crank up the shutter speed and all is well. The D70 syncs to 1/500th but playing with the hotshoe contacts, or by using an Ikelite eV controller as I do, the limit is only the flash duration.

So it is all easy! Well if someone can invent a sensor that will tell you if you have backscatter than it will be. I shot all these images in only 5-10 metres visibility. Unless you have managed to shoot a snowstorm seeing any scatter on the tiny LCD is impossible, even if you use the magnifier. This where your laptop back in the room becomes handy. If you do not take one then the dive centre might have one or just play with your strobe positioning

White frogfish 1/80th f8 manual AF-S closest subject. "Contrast is no problem"
Nikon D70 and 10.5mm in an Ikelite housing, 2 Ikelite DS125 strobes with eV controllers. One slaved, ISO 200, White balance auto, Contrast auto, Sharpening auto, Adobe RGB

Emperor shrimp. 1/80th f8 manual AF-S closest subject. "Composition is always tricky"
Nikon D70 and 10.5mm in an Ikelite housing, 2 Ikelite DS125 strobes with eV controllers. One slaved, ISO 200, White balance auto, Contrast auto, Sharpening auto, Adobe RGB

Frog in a sponge 1/60th f8 Aperture priority AF-S dynamic area. "Put subjects in context". Nikon D70 and 10.5mm in an Ikelite housing, 2 Ikelite DS125 strobes with eV controllers. One slaved, ISO 200, White balance auto, Contrast auto, Sharpening auto, Adobe RGB

with the water column in mind. Which is what you are going to be doing anyway.

Next find your subjects. The main priority is sessile, so when you get 3cm from their poor face they do not run away. These are generally the same subjects in Lembeh that the macro guys are on so that is why it is such a good place for this technique. Colour is useful for contrast especially in the black sand. Also the image will be more appealing all round! We as photographers like muck but it is persuading everyone else that is the thing.

And now shoot. The advent of huge capacity memory cards of up to 4GB with super fast write times leave you with no excuse. As long as your strobes are freshly charged there is no reason not to try a shot or experiment. Gone are the days of 36 precious images to be rationed for the best situation.

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Do Great whites think?

By Charles Hood

In 1974 Peter Benchley's novel *Jaws* was first published. The following year a film by the same title sealed Steven Spielberg's talent as a master entertainer. It gripped the world. Great white sharks were the enemy.

What Speilberg managed to achieve was to instil in people's minds that a shark could think. It could actively strategize about what it was going to hunt and serve up on the dinner table. While this may have been highly successful for Hollywood it would prove to be a disastrous for Carcharodon carcharias.

It is now well documented that sharks just react on their instinct, or do they? Today, the majority of us have changed our minds about the great white. More and more people want to observe this super apex predator in the wild rather than see its extinction. Fishermen who once hunted the great white now take out parties of divers. The saying now is, a great white alive is worth far more than it was once worth dead. Which brings me back to Peter Benchley.

Had he known in the short to medium term the environmental impact that his novel would create, not a single character would have been struck by his typewriter. However, he can't go back and change history, so today he actively campaigns all over the world to protect the very fish he once made the enemy of all mankind. So keen is he to show everyone what a majestic fish the great white is for his 40th wedding anniversary he took his wife shark diving off Guadalupe Island (Mexico).

The trip was organized by renowned shark photographer Douglas David Seifert and I managed to get myself an invite. However, this was to be no ordinary trip. We were going late in the season (November) to film the large pregnant females. Most snappers go early, around September time, when the water is warmer and the visibility clearer. But this in the main attracts the smaller males. We wanted to photograph the larger females – up to a massive seven metres in length. Now this is where the fun starts.

We were shooting from cages positioned about two metres abaft of the stern. The first problem is you can't orientate yourself for ideal

Mr & Mrs Benchley with Douglas David Seifert

(Above and below) These are the pictures you want. Sea & Sea D100 housing 1/250 f5.6 16mm natural light

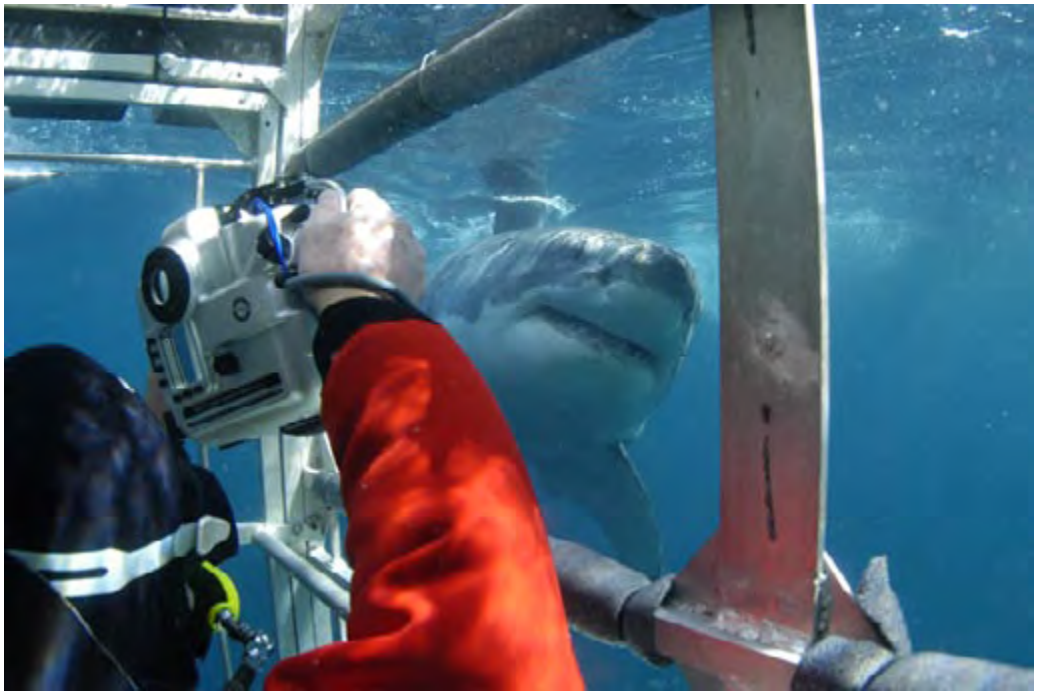
This is what you don't want! Sea & Sea D100 housing 1/125 f5.6 20mm

shooting conditions. If the sun was pointing straight at you then so be it. You can't alter the position of the wind and sun. You had to adapt your photography to the situation you were in.

We were using surface supply, which did help in manoeuvrability, but still trying to point a large housing in the confined space of a cage was not at all easy. The first decision that had to be made was a choice of lens. Zooms are great but I find them too soft. I prefer fixed focal length lenses. I would rather sacrifice flexibility in order to get sharper results.

The visibility was around ten metres at best. So for the majority of the time I used the Nikon 16mm lens on a D100. This proved wide enough, most of the time, (more on that later) to get the whole fish in while not getting the distortion of a full frame fisheye. As we were late in the season the sunlight was relatively weak so I upped the film speed rating to ASA400. Even so this only gave me a shutter speed of around 125th second at f5.6. So for some of the time I used a fill-in flash to just crisp up the edges of the image. This also provided a trickle of light to illuminate the inside of the shark's mouth.

The first four days proved very



Dave Nardini, Seacam and shark. Sea & Sea D100 housing 1/180 f6.7 16mm

Look into my eye, my eye. Sea & Sea D100 housing 1/125 f6.7 16mm

frustrating. The females proved to be much more timid than the males. They would hang around about five metres below the surface. In clearer visibility it would have been fine. I could have switched to a 20mm lens and got some credible results. Indeed I did chance a few times but the vis just didn't allow it. But on the fifth and final day this all changed.

All the other boats had disappeared and we were alone. The sharks decided to work the boat as a team. Maybe they are more intelligent that we make them out to be after all. Let me explain shark wrangling. The concept is to throw large chunks of bait (tuna heads), attached to a rope a few metres in front of the cages. As the sharks approached for the 'kill' the surface crew, known as wranglers, would haul the tuna heads back into the boat and thus lure the sharks towards the cage. Nine times out of ten the shark doesn't get its supper. Apparently the males are happy with this, knowing eventually they will catch the wrangler off guard. However, the females derive a different strategy.

They hunt in pairs. One circles around on the surface while the other makes a strike from deep water. This is absolutely terrifying to watch. The first time it happened we were all concentrating on the circling shark. Then bang. We had a six metre two ton hungry fish smash into the cage. This stunned the shark. It also stunned the divers! The problem was not so much the impact as what happened afterwards. Great whites are not renowned for their ability to swim backwards. So we now had this huge animal with its nose jammed into the cage with only forward thrust. The shark did what it only knew how and that was to thrash around not too dissimilar to a mackerel caught on a line. The only problem was this mackerel was over two tons.

At this point trying to do anything about self-preservation is pointless. It was, however, a great way to test out the D100's auto-focus capability. The 16mm lens allowed me to shoot from the hip and not come away with too dissappointing result. Peter explained afterwards that maybe his portrayal of the great white as being intelligent wasn't as far fetched as we are led to believe.

Following this were prepared for the rest of what proved to be a

Can I come in? Sea & Sea D100 housing 1/320 f5.6 16mm natural light

very successful day. There were four of us in the cage. So we worked a system. The guys at the two ends would observe outwards while the two middle guys would split one looking forwards and the other backwards. As the action, when it happened was fast, we developed a series of foot taps to notify each other of an approaching shark and thus could always keep an eye in the view finder. Furthermore if the shark appeared at one end of the cage the front diver would duck down and shoot from the bottom of the cage allowing the second diver in to shoot over his head.

It was evidently apparent that the other cage hadn't gelled as a team and a few cross words were beginning to develop after each dive. So what advice would I give someone going to photograph great whites?

Be flexible and work as a team. Check out your exposure and shoot in manual. As the sharks are very white they will trick the auto-exposure into under exposing. While this gives a perfect image of a portion of the fish the background will look like it was taken at night. Use autofocus, it works. If it hunts this is because there isn't enough contrast. If there isn't enough contrast chances are the result will be poor anyway. Shutter speed use a minimum of 125th second for a super wide angle lens, a 1/250th is better but watch the synchronisation if you are using a strobe – the D100 sinks at 1/180th second.

Finally it goes without saying – shoot digital. I was convinced that the 20mm would have been a better choice of lens. It was only when you view them on a monitor afterwards I was proved wrong and was able to correct this for the rest of the trip.

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S-TTL. The end of an era.

Digital underwater cameras have been a real breakthrough for divers. Offering instant feedback to speed up your learning curve, user friendly features like auto exposure and autofocus, zoom lenses with macro built right in and negligible shooting costs, digital seems the perfect solution for underwater imaging.

Until you add a flashgun. Then the nightmares and confusion begin. Especially when it comes to getting the exposure right. With many guns you have to shoot manually. Often this means taking several test shots to get it right. Something you may not be able to do with a moving subject. Auto guns can help, but you need a camera with a fixable equivalent film speed and lockable aperture to use these properly.

Inon's D2000 puts those problems firmly in the past. It uses the best flash exposure system in the world to get your lighting exactly right. Your camera's own flash meter. Accurate, dependable and affordable, the Inon D2000 marks the end of an era. The end of poor flash photography.

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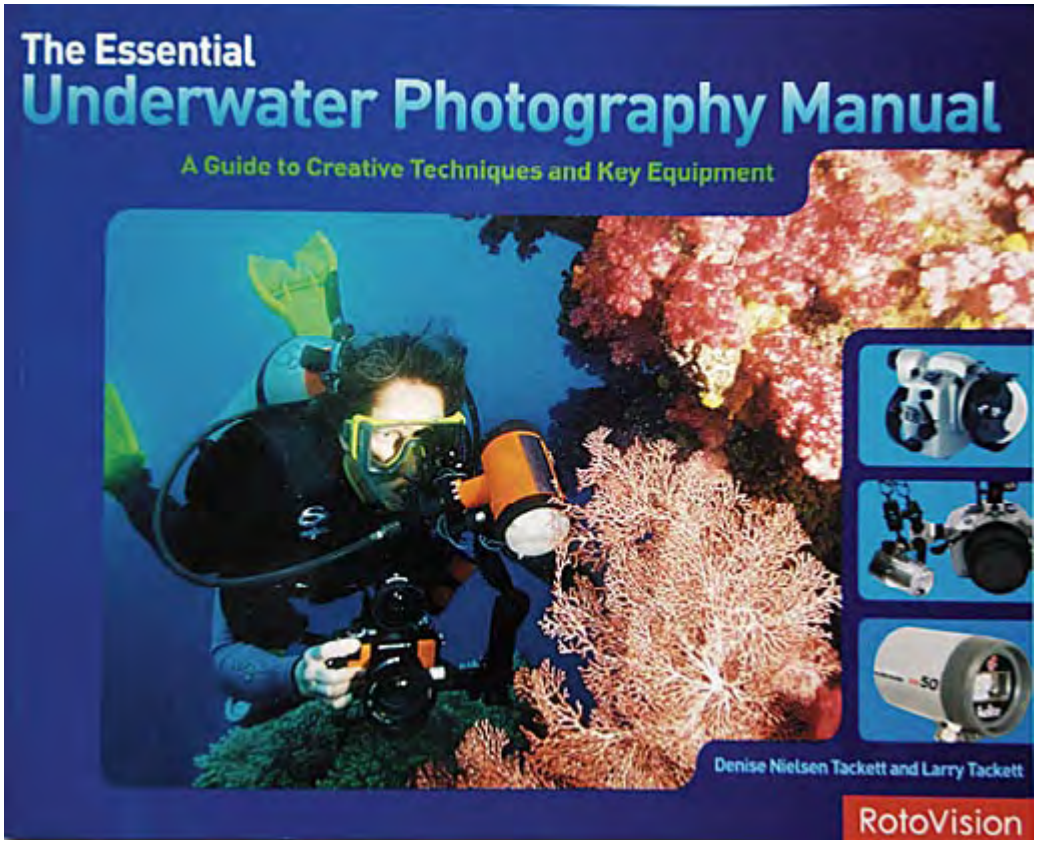
Book reviews

The Essential Underwater Photography Manual

by Denise Nielsen Tackett and Larry Tackett.



The problem with any book which sets out to call itself the 'essential' guide to any subject is that it must inevitably fail some readers in some aspects; what you or I may find absolutely crucial in the quest for underwater photographic perfection may well not rate so highly in another's eyes. Nonetheless, the Tacketts have come up with a tome which seems to satisfy most of the people most of the time, and they ought to be commended for that.

This is a nicely laid-out book. Its ten chapters cover some basic questions such as 'Film or Digital?', 'Equipment Considerations' and 'Creative Lighting Techniques', while there are others that purport to reveal the secrets of 'Creative Composition', 'Telling Stories' and the (for me) more interesting approach, 'The Art of Photographing Behaviour'. Each chapter – the book is spread over 176 pages – carries pleasant enough photographs (but hardly "awe-inspiring" ones, as the publisher's blurb somewhat breathlessly insists) illustrating the various points made. One of the more memorable of these is the 'full bucket' analogy, which is the Tacketts' way of providing a simple visual approach to the rights and wrongs of exposure; I must admit that I found this a rather entertaining way to remember the basics of aperture, shutter speed and ISO.

The stated aim of this guide, as is so often the case with How To manuals, is to allow readers "to stop taking pictures and start making them", which is a noble aim and one which the authors try and pair up with above all having fun. I'm sure that any reader who assiduously combines study of this book with scrutiny of his own underwater efforts will see a real learning curve of improvement, and this alone justifies its price.

Publisher: RotoVision.
Price: $29.99, £19.99
http://www.rotovision.com/description.asp?bookid=2325

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Guidelines for contributors

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

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

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

If you have an idea for an article,
contact me first before putting pen to paper.
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How to submit articles

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

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

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Parting shot

Images from the somewhat abstract underwater world often lack a sense of scale or size, and as underwater photographers another diver in the frames gives our images an instantly recognisable feature, but what if you find yourself without a buddy or model?

In December 2004 I was diving Te Waikoropupu Springs, in New Zealand. Diving the spring exceeded my wildest expectations, with fantastic visibility and amazing colours, but with no other divers at the site I felt that the images I had taken lacked the sense of scale. To get a diver in the frame would need some creative thinking.

I may have lacked an underwater model but I had one valuable asset - a topside assistant. Perhaps I should qualify the use of the word "assistant".... My assistant in this case was my nine-year-old daughter, Emily. Emily would take an underwater picture, with me as the model!

There is a small entrance to the spring, giving divers access to the main vent through the reeds. This was the only access to the water's edge, and as I finned through it I noticed the reeds formed a natural frame to the intense blue of the main spring. The water was so clear that the far side of the spring - around 40 metres away - was visible at this distance. This was the only spot where a self portrait was possible, and it would need more than a bit of setting up and assistant briefing.

I preset my Nikonos V and 15mm lens at F5.6 and Aperture priority was chosen to cope with the fluctuating light levels. Film stock was Fuji Velvia 100F.

Taking care of the camera settings was the easy part. Asking Emily to kneel at the edge of the spring, lower the camera to arms length, keep the camera body level with the surface of the spring, and take five or six frames just as I reached the edge of the reeds was - on the face of it - asking a lot of a nine-year-old. With mediocre expectations I entered the spring. As I returned I half expected to see Emily sitting on the bank having forgotten all about my picture, but right on cue a Nikonos descended into the water, finger on the shutter release. As I dekitted I was confronted by Emily, who announced "The camera would only take one picture". I had forgotten to tell her to advance the film after every shot.....

Considering all the variables at work here I was not expecting such a rewarding image. Nine-year-olds are not renowned for their concentration skills or doing anything an adult asks of them but Emily excelled on this occasion.

This image is exactly as I saw it in my mind's eye. To achieve that in one frame makes it all the more rewarding.

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If so e mail me and yours could be the next "Parting shot".
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