

Underwater Photography

a web magazine
Feb/Mar 2004



Ikelite EOS-300D
Olympus PT-020
Subal/Canon C10
INON Canon X-2

Seacam Fuji S2
Doug Perrine
Taiji Dolphins
Komodo

Minahasa Lagoon
Best Behaviour
Digital V Film
Artificial light



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UwP Readers are 100% UW Photographers

UwP readers are underwater photographers or those who wish to be. 100%.

While many magazines have a larger circulation, only a small percentage of those are photographers.

UwP has a minimum of 11,000 readers.

'Readers' are photographers who visit the website and **choose** to download UwP issues.

Worldwide audience

Subscribers are located in **93 different countries** with the majority from the USA, UK, Australia, Canada and Europe. The Asian subscriber count is growing rapidly. UwP logged website visitors from 101 countries.

A Majority of Beginners

Subscriber demographics also tell us that over 70% of readers are beginning or intermediate underwater photographers who are interested in learning the basics of underwater photography or expanding their knowledge with expert tips & techniques.

Strong Growth

The exponential growth in UwP's unique website visitors and readers began in August and climbs steadily upward on a steep incline increasing over 400% in the last 5 months.

Hundreds of 'Refer a Friend' forms are sent each quarter.

UwP rates are much lower than conventional magazines

How Do We Know Who Reads UwP?

Each website visitor is assigned a cookie which is stored on their computer, then checked and saved in our log when the photographer downloads an issue. This ensures each photographer is counted as a 'reader' only once. It is also checked to ensure the unique website visitor count is accurate.

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There is no better, more cost effective way to get your message to underwater photographers than with UwP.

E mail Deb Fugitt

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UwP uses a conventional magazine format adapted for the web.

UwP readers spend hours reading UwP issues rather than minutes scanning a website.

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a web magazine
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 e mail uwp@uwpmag.com

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Editorial

PLEASE subscribe to UWP

I hope the lighthearted image on the right grabbed your attention because I want to encourage you to subscribe to UWP if you haven't already. There are absolutely no catches in doing so and your privacy is paramount to us.

I need you to subscribe by answering a few simple questions so I can get an idea of what you want and so provide suitable articles. Also we need to show our advertisers how many loyal supporters we have to encourage them to advertise with us.

So, one more time, PLEASE



subscribe to UWP. There's no catches, it's free and it won't take a moment and you will be supporting UWP immensely and helping keep it free.

PLEASE help promote UWP by ...

taking the time to print off the last page of this issue and get permission to put it up in your local dive/photo shop, dive club or u/w photo club. I need as many people as possible to be aware of UWP. It won't take long and you'll be helping to promote UWP.

Take a picture of you and the flyer in situ and I'll print it in the next issue!

Underwater Photography

is published by PR Productions

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UwP Googlewhack

Did you know that uwpmag.com had a googlewhack?

A googlewhack is what happens when just two words are entered in to Google and it comes back with one and only one hit. That's just one hit out of the 3 billion or so pages that Google searches.

For a while about this time last year UwP had a googlewhack with Grandmaster Sticklebacks. Sadly, with the transient nature of the world wide web, it no longer exists but when it did I was contacted by a chap called Dave Gorman whose previous project had been flying round the world meeting up with people with the same name. This had resulted in a sell out stage show in the UK and US, a best selling book "Are you Dave Gorman?" and a series on BBC2.

For reasons I won't go in to, Dave had now been challenged to find and meet 10 GW owners in a row and each could only provide him with two new GWs to continue the chain.

So Dave came round to my house for tea and biscuits and a pleasant chat before we set about finding him another two GWs to help with his quest.

We found one GW while he was here and I found another later and e mailed it to him. The owner lived in Seattle and Dave flew over to meet



him!

Anyway, before he left, Dave took a picture of me (it's just as well he has a flourishing career as a stage performer, author and all round good egg because he's no great shakes as a portrait photographer) and this was projected onto the screen at the appropriate time in his stage show.

The tour of the show has finished for the time being but the story of UWP's GW status lives on in Dave's book "Dave Gorman's Googlewhack Adventure".

If you fancy a really funny read I highly recommend it. In today's war torn, terrorist ridden, serious world it is a glowing example of English eccentricity. A bit like UWP really.

Find out more at www.davegorman.com.

What links these sites?



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www.oceanleisure.co.uk

UK Aquatica problems explanation. Cameras Underwater are now their agent.

I purchased my first Aquatica housing from the then Aquatica importer for the U.K, the Image Centre in London, in 1995. As a qualified Mechanical Design Engineer, I fully appreciated the high quality of the aluminium castings as well as the integrity and ergonomics of all the controls. Everything on these housings was well thought-out and the housings were a joy to use. So much so, that I purchased another one around 1997. I have built up a considerable portfolio of images from around the world and a lot of credit for this must go to Aquatica for the design philosophy that they build into each housing.

Towards the end of 2002, I decided that since I had a number of overseas trips planned for the following year, it would be prudent to service the o-rings on the housings. I contacted Benny Sutton at the Image Centre to order these and was horrified to learn that spares, service kits, etc., were rapidly becoming scarce due to circumstances regarding Nikon USA. After many telephone calls to & from the Image Centre, Benny eventually suggested that I try Cameras Underwater in Devon. Jenny Rosenfeld was very sympathetic but because of the same problems that the Image Centre was experiencing, would have to order the service kits that I required from the now nearest importer in Spain. Jenny placed the order for the o-ring service kit and this arrived, some few months later! Whatever the reasons were in the USA for the spares situation

Readers Lives

here in the U.K, these were immaterial. Here I was, an avid proponent of Aquatica products, faced with a dearth of Aquatica spares in my own country and having to order from my nearest supplier in Spain! Thus it was that I felt compelled to write my e-mail to you of 11/08/03.

As you know, due to a paucity of readers' letters to UWP magazine during that period of 2003, you decided to omit the readers page from the October/November issue and would publish my letter in the following issue. Later in 2003 I called into Cameras Underwater to collect a diffuser for one of my strobes that I managed to lose in the Red Sea in October. It was only then by chance that I discovered from Jenny that Cameras Underwater were now Aquatica main agents for the U.K. and were now in a position to order parts direct from Aquatica. This event was certainly not widely broadcast in the U.K. and if it were not for my conversation with Jenny that day I would probably be none the wiser now! In any case, it was probably too late then to retract my e-mail to you. As to whether you should have consulted Blake Stoughton in this regard, well, that's another matter.

I am extremely pleased that the situation for obtaining Aquatica parts has been resolved and also pleased that Cameras Underwater are now Aquatica main agents. These people have always been very helpful in the past and are a pleasure to deal with. I have always been an advocate of Aquatica products

Want to have your say?
E mail peter@uwpmag.com

and now feel a little more justification for being so.
Robin Nash robin.nash@uk.thalesgroup.com

Rugby World Cup

What's the connection between the Rugby World Cup and underwater photography (Editorial,UwP16)?

There are plenty of Aussies who would love to see an underwater photo of Jonny Wilkinson (wearing a lead lifejacket). Only joking!

Congratulations on both a well played out World Cup and a well laid out magazine, the horizontal format is great.

Tim Bales timbales@tig.com.au

UWP horizontal

I have been waiting expectantly to see what we would enjoy in the new, wide-format UWP.

The result has been no disappointment at all. As well as a much better, user-friendly layout, I believe that you and the team have excelled themselves in producing some glorious photography of the highest possible standard. The articles are beautifully illustrated and the colour rendition is superb.

The only thing that concerns me is that you have raised the bar on all the aspiring digital photographers like myself even higher!

Congratulations on a marvelous edition in which we can all delight – and you can take great pride – how far we have come from Edition 1 – which I was looking at the other night.

Michael K Hill. Washington D.C.

Jonah Housings



Jonah C10D
for Canon
10D camera



Jonah ND100
for Nikon
D100 camera

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News, Travel & Events

2004 City Seahorse Trips

Raja Ampat Liveaboard Photo/
Dive Tours
November 14 - December 7,
2004
(2 trips)



© 2002, Deb Fugitt, City Seahorse, Inc.

She would like to emphasize that these are not exploration trips. Deb dived Raja Ampat for the last 5 years with over 500 dives pinpointing the best areas of the best dive sites for photography while working for the local dive operation. The trip is planned to put photographers on these sites in the right place, in the conditions for current, marine life, visibility and

lighting that provide the best photo opportunities.

Deb Fugitt will escort liveaboard trips to Indonesia's Raja Ampat islands during the best season for photography.

lighting that provide the best photo opportunities.

Raja Ampat offers unique dive sites with the highest diversity of marine life ever recorded, plus outstanding topside beauty.

The 10, 14 or 28 night trips are aboard Queen of the Sea, a new owner operated luxury Indonesia liveaboard and can be arranged by contacting Deb, deb@cityseahorse.com, 817 626-0636. Details at www.cityseahorse.com/rajaampat

**Vanuatu "Over & Under" Diving
Tour
May 20 - June 6, 2004**

This is a strategically planned trip for photographers which combines diving on newly explored areas of Vanuatu that were off-limits to tourists until recently, with a visit to Pentecost island for the land-diving and a visit to Mt. Yasur, the active volcano on the island of Tanna during the full moon.

The 9 night diving trip aboard The Silent One includes a day at Pentecost Island to see N'gol, the land-diving ceremony where men and boys jump from a tall scaffolding tied with a vine around an ankle to bless



the yam harvest. They are the original bungee jumpers. The liveboard dates are May 23- June 1.

Expect wide-angle and macro uw photo ops, plus outstanding topside opportunities along the way. The trip culminates on June 3 - 5 in a 3 day excursion to the island of

Tanna to photograph its active volcano at full moon.

The trip is priced with air from LAX including the liveboard, all hotels, domestic air, Pentecost and Tanna trips. May be priced without international air. Contact Deb Fugitt, debf@cityseahorse.com, 817 626-0636. Details at

www.cityseahorse.com/vanuatu

Great flight deals

These days it is Good News for those flying from the USA to Southeast Asia.

Starting in February 2004, Singapore Airlines will be making aviation history by flying non-stop from LAX to Singapore!

Cathay Pacific has an All-Asia pass at an amazing US\$999 for a 21day go-anywhere deal ... including Bali (Beijing, Bangkok, Singapore, Manila, etc) and there are even deals in the fine print for 4*hotels in Hong Kong at US\$25/night.

They are also offering US\$599 to Singapore; US\$799 from NYC

Air Paradise, Bali's own airline, will launch their new website in mid-January. The site will have a general information page on Bali to give visitors insight into Balinese culture, scenery, style.

For further details visit www.Cathay-usa.com for Americans and www.CathayPacific.com for the rest of us.

Backscatter photo trips 2004

Digital shootout in Taveuni, Fiji

Topics:: digital photo, Photoshop

Seminars by:: Backscatter, Adobe, Light & Motion

Gear support:: free demo gear, Epson prints

5/5 0 5/16 2004

Channel Islands Mini Workshops

Topics: Digital, film & video

Seminars by:: Backscatter

Gear support:: free demo gear, E6 processing

1/21 - 01/24, 4/17 - 04/20, 7/17 - 07/20, 7/21 - 07/24, 8/25 - 08/28, 9/25 - 09/28, 11/03 - 11/08, 12/08 - 12/11

Advanced photo Vancouver Island

Topics: Digital

Seminars by: Backscatter

Gear support:: Back-up gear, tech support

6/1 - 6/12

Great White Sharks Guadalupe Island, Mexico

Gear support:: Free demo gear, E6 processing

11/19 - 11/24

Digital Indonesia Alor / Komodo

Topics:: digital photo

Seminars by:Backscatter, Light & Motion, Jim Watt

Gear support:: Free demo gear

11/28 - 12/10, 12/11 - 12/23

Please see their website or contact them for details.

<http://www.backscatter.com>

Wetpixel.com redesign

On Jan 24, 2004, a new Wetpixel.com was unveiled, showcasing several new features and featuring stronger site integration for the already active community. What this means for Wetpixel users is that logging on to the site gives you seamless integration between the bulletin boards, reviews, news, and features. You will now be able to search the entire website with the push of a button. One login does it all!

A few highlights of the new design include:

- A links section, where you can submit and manage links about your own underwater imaging sites.
- Wiseman Beginner Column, which is being updated with over a dozen articles for new underwater photographers.
- News and content submission: members will soon be able to log in and submit their own content.

Founded in 1999, Wetpixel is a hub for digital underwater imaging and hosts over 1700 underwater photographers who sharing information and photographs in its community forums area.

www.wetpixel.com

Komodo with Mark Webster

Mark Webster will be leading a photo workshop group in December 2004 to the extraordinarily rich waters of the Komodo National Park with Kararu Dive Voyages.

The voyage will commence in Bali and sail to the islands on Komodo and Rinca which are famed for their diversity of unusual and rare marine life. You can expect everything from whale sharks to pigmy seahorses and everything in between.

The boat is well equipped for photographers and understands their needs including the preference for solo diving, although the guides are invaluable for discovering those rare critters.

See Mark's website for further details www.photec.co.uk or visit www.kararu.com for details of the boat.

CORNSoUP back

The Cornwall Society of Underwater Photographers (CORNSoUP) had been in existence for a number of years but was fairly small. At the end of last summer, in recognition of the fact that Cornwall boasts a particularly high number of talented individuals in this field, new life was breathed into the club.

The aim was to encourage the local talent in video, digital photography, slide and print and to give everyone a forum to show and discuss their work (and stand around in a pub and talk about f-stops!).

Not a branch of BSoUP, the club meets every month or so on an informal basis. There are no membership fees, rules or age limits.

The group has grown rapidly and there are already over thirty professional, keen amateur and interested people involved. The emphasis is on getting the talent that

is around Cornwall to come out of the woodwork and show their stuff and help promote the underwater world.

In fact there has been interest in attending from across the border in Devon.....even they're welcome! Anyone wanting to know more e-mail cornsoup@sevensenseimages.com

Photo tours 2004

There is a lot to be said for traveling with a specialist who is knowledgeable of the area and is there to share their expertise and make sure that your trip runs smoothly. All of the photo pros are good friends and fun people to travel with.

In 2004 we still have a few spaces on the following trips:

March 11 - March 26, 2004 Pelagian - Kupang to Sorong - Hosted by Stuart & Michele Westmorland

July 10-23, 2004 Pelagian - Sorong-Sorong - Hosted by Larry + Denise Tackett,

July 27-Aug 9, 2004 Pelagian - Sorong-Sorong - Hosted by Larry + Denise, Oct 20-Nov 5, 2004 Pindito - Maumere to Sorong - hosted by Clay Wiseman,

November 14-29, 2004 Pelagian - Sorong-Kupang - Hosted by Larry + Denise

Further details are at www.reefrainforest.com/specgroups.htm

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News and New Products

Ikelite EOS-300D Housing

The clear molded dSLR introduces a compact new housing system at a very realistic price. It features full capabilities and operates safely to 200 feet depth.

The Auto Exposure Lock and Focus Lock are placed where they can be activated with your thumb while taking a picture. Special “stay depressed when desired” control allows dial to provide constant manual aperture rather than shutter speed when desired.

All ports from their SLR systems can be utilized, allowing use of most macro, wide angle, and zoom lenses. This system allows you to see that the port is sealed.

The housing “O” ring seal is a masterpiece in fail-safe simplicity compared to designs that require stuffing the “O” ring into a groove. You can see that the “O” ring is sealed.

The heavy duty thick wall housing is molded of corrosion free clear polycarbonate. The Release Handle system allows easy attachment and removal of SubStrobe mounting arms at the touch of a button. Two screws remove the handle and tray assembly for traveling.

The housing is sized and weighted for near neutral buoyancy and superb handling underwater. Camera installation is quick and simple. The dependable controls are conveniently placed at your fingertips, and kept water tight with Ikelite pioneered Quad-Ring seal glands proven to be the most reliable method for sealing controls.



The Ikelite Super-Eye magnifier provided with the housing offers enhanced viewing while wearing a diving mask.

This Canon digital camera allows only manual operation with any underwater strobe. TTL or E-TTL conversion circuitry is not available.

For further details visit www.ikelite.com

New Ultralight adaptor

Ultralight has modified their TTL adapter to now attach on top of their new digital handle. This allows for use of Ikelites TTL unit or manual controller unit to be attached at the top of the handle. The units tighten onto the TTL adapter and can be positioned where needed.

www.ulcs.com



Fantasea CP-3 Nikon Coolpix 3100 Housing

Fantasea's new CP-3 housing for Nikon Coolpix 3100 (3 MegaPix) and Coolpix 2100 (2MegaPix) Cameras should now be available.

It is depth rated to 40 meters/130 ft and has controls for 7 functions including:

Shutter release , Zoom In , Zoom Out , Flash on and off , Macro focus , Confirm or enter (flash & Macro) , Quick review and Restart.

www.fantasea.com



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Subal C30 housing for Canon EOS 300D

The Subal C30 housing is machined from a solid block of aluminium and follows the proved and tried design of their Nikon D100 housing.

There are controls for Power On/Off, shutter release, Manual Focus/Zoom, Mode, main dial and lens release and there are push buttons for Menu, Info, Jump, Play, Delete, Set, Light, Exposure compensation, Multiselector, AE-Lock and Focus area selector.

The C30 weighs just 1.6kg without port and accessories it measures 230 x 140 x 140mm without port and handles. Underwater the C30 is neutral but final buoyancy will depend on the port and accessories being used.

A single flash connector is provided and TTL performance can only be achieved by using the S6 connector and Canon flashgun.

The Subal C30 can be used down to 70 metres (210 feet).

For further information visit www.subal.com



Nikon WP-CP1

This Waterproof Case is an optional accessory designed exclusively for COOLPIX 2200 and COOLPIX 3200. The case allows you to take pictures safely in the rain, on the beach or even underwater to the depth of 40m.

www.nikon.co.uk

Gates High definition HD-1 video housing



The Gates HD-1 houses the JVC HD cameras JY-HD10U, GR-HD1 and GR-PD1.

There are mechanical controls for Power On/Off, Record/Standby, Snapshot, Zoom, Auto / Manual Focus, HD / SD Mode, Internal "Flip" Color Correction Filter, Manual Focus Control, Program AE, Shutter Speed – Iris / White Balance, Select Dial, Select Dial Execute

Its dimensions are 12." L x 6.7" H x 6.7" W (12.5" w/handles) or 32 cm L x 17 cm H x 17 cm W (32 cm w/handles).

It weighs 14.3 lbs / 6.5 kg and is neutral underwater and is depth rated to 450 feet / 137 meters.

www.gateshousings.com

Light & Motion Mako video housing

Light & Motion have announced their Mako housings for



Sony's mega-pixel MiniDV digital cameras, the PC330, PC300, PC120 and PC115, PC110 and PC100.

The Mako housing employs Smart Grip fingertip controls which allow access to camcorder functions as well as your lighting system.

There are also two color active matrix monitors - the Mako monitor back or the Mako remote monitor

The Mako is available as a stand alone housing or can be purchased as part of a complete travel package.

The Mako housing costs \$2399.

www.uwimaging.com

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SUBAL C10 housing for Canon EOS 10D



The Subal C10 follows the successful and well received design strategy of the new generation of underwater housings machined from solid stock.

A 4 mm main O ring and the Subal QuickLock latching system make it virtually impossible to close the lid incorrectly. Threaded holes on the base and in the top shoe allow mounting of trays, aiming lights or other accessories to be mounted. The generous shading of the LCD-monitor port provides a bright and clear image for easy viewing.

The housing incorporates an excellent viewfinder optic for full frame viewing.

Dimensions: W x H x D Approx. 240x170x140 mm (w/o port and handles). Weight Approx. 2.1 kg (w/o port and accessories). Buoyancy: All but neutral (dependant on the port and accessories used).

2 Flash connectors are supplied as standard with optional Nikonos V, Ikelite or Subtronic S6 sockets. TTL mode only available with S6 socket and an original Canon flash gun.

Max. Depth rating 70 m (210 ft)

Controls/Functions:

Power On/OFF, Shutter Release, Front and Rear Main Dial, Manual Focus/Zoom, Mode Dial, Lens Release.

Push Buttons for: Light, AF/WB Selector, Drive-ISO, Metering System/Flash Power Compensation, Menu, Info, Jump, Direction Switching, Playback, Delete, Index/AE-Lock, Focus Area Selector, Set.

www.subal.com

Inon X-2



The Inon X-2 is designed for the Canon EOS10D and is machined from aluminum and reinforced plastic.

It's innovative design incorporates 3 Optical Connectors - 2 for Strobes and 1 for remote light switch. The 2 TTL Strobe connectors are individually controllable on the X-2 control panel, so that the user can adjust either strobe manually.

Function Mode - User can select 3 modes, "Strobe Mode" "Light Mode" and "Natural Light

Mode", underwater on the back panel of X-2.

"Strobe Mode" is for strobe usage. "Light Mode" is for external light use. The optional compact external light unit (to be released as an optional accessory) can be used with the X-2 housing. Instead of Strobes, this compact light unit works with X-2 housing as same as strobes. The light unit is connected to the X-2 through an Optical Fiber Cable so there is no water-leakage.

"Natural Light Mode" - With this mode, Strobe and external light can be intentionally deactivated.

The X-2 has Remote Optical Connector for activating shutter release button from a distance. Either strobe or external light unit coupled other side of the remote optical fiber can be worked as trigger switch of shutter release button. With strobe, remote operation can be worked as wireless or as wired (Optical Cable).

External light has to be connected with optical fiber cable (the other side is connected to Remote Optical Connector)

Other features include:

*The focus Light/target laser of Z-220/D-180 is turned on by partially pressing of shutter release button then automatically turned off before the exposure.

*Ports compatible with the X-1 are also useable on the X-2 housing.

*The INON MRS100 Port Type U enables, with its Magnet Rotary System, the user to use lens barrel rotation as if they are adjusting the lens barrel directly.

Like the X-1 series, pick-up finder, 3D Guide System and Leak Sensor are installed.

For further information please contact your nearest Inon dealer.

Olympus 5060 & PT-020 housing system

Until now there were two distinct categories of underwater digital camera - SLR and “point and shoot” but now, with the introduction of the Olympus PT-020 we have a new intermediate category and I don’t know what to call it.

“Point and shoot interchangeable lens auto TTL flash” is a bit of a mouthful but that’s what it is. PSILATTL for short if you want but however you categorize it this new outfit is truly groundbreaking.

The Olympus C5060 wide zoom camera is the latest from this revolutionary range. It’s a 5.1 megapixel camera with the capability, it would seem, of a Tardis. Measuring just 116 (W) x 87 (H) x 65.6 (D)mm and weighing just 430gms it has functions and a performance which defy belief.

Fortunately in such a review I don’t have to go into great detail about the camera’s capabilities for we are here to report (worship?) the arrival of the PT-020 housing system which I think is the most significant development in underwater photography since the Calypsophot.

Wow! Hold on there. That’s a bit bold but I say not.

Here we have a housing system which for an incredibly reasonable price will enable almost anyone to take almost any underwater photograph they could wish to take and still be able to take it in their hand luggage with plenty to spare.

The housing has no fewer than 20 controls for all the functions you might need underwater. The



majority are push button controls which touch the camera accurately from all angles with ergonomics which are extraordinary. It is quite frankly a design masterpiece. The main seal is a double compression design which should prove foolproof and the interchangeable port has both piston and compression seals.

The lens port can be changed and replaced with the wide angle port for the 0.7 wide angle lens. I haven’t physically seen one of those yet but it looks like it has a flat port which will reduce the wide angle coverage from the 35mm equivalent of 19mm to about 24mm.

And if this were not enough there is also an external housing for the Olympus FL-20 TTL flash (strobe) which is triggered directly from the camera via a 5 pin external socket and sync lead. This provides “auto TTL” exposure automation.



The PT-020 is the first Olympus housing to have interchangeable ports. The ports incorporate both piston and compression seals with two rotary retaining clips



The sync socket cover O rings are virtually impossible to access and maintain.

The combination of this housing and its accessories breaks new ground in terms of price and performance. There are, however, alternatives for both the wide angle lens and strobe housings (Inon and UN manufacture external wide angle lenses and optically triggered strobes) but Olympus's wide angle lens and strobe can also be used on land which I would have thought is a strong argument for their purchase.

The design and quality of construction is very high and virtually flawless except for the sync cap which covers the 5 pin connector socket. The small piston and compression O rings

are virtually impossible to access to remove them to regrease them and clean their grooves

The underwater photography world (especially the equipment retailers) owes a huge debt of gratitude to Olympus's commitment to producing quality housings for their digital range of cameras. They have injected new life into underwater photography and opened up this hobby to a whole new audience.

Peter Rowlands
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Seacam S2 Housing Review

By James Wiseman

The first time I saw the new Seacam housing for the Fuji S2pro was at DEMA in Sept. 2003. Fortunately, a fellow HUPS member Shan Hodges bought the housing and pro viewfinder, and graciously lent it to me for this review. Stephen Frink of Seacamusa.com also sent me the S-180 viewfinder, macroport, small dome, and the appropriate extension rings and gears to try out the 105, 12-24DX, and the 16mm fisheye.



Size and Construction

The Seacam is the smallest and lightest housing for the S2 that I have handled yet. It is larger than the Seacam housing for the Nikon D100 but is a bit smaller than the D1X housing. The following photograph shows the back of the Seacam compared to my Aquatica housing. You can also see in this photo that the

handles on the Seacam are contoured and are not made to accept strobe arm mounts.

The Seacam S2 housing is constructed of cast and machined aluminum which is contoured to fit the camera like a glove. The inside is flocked with a moisture absorbent black material designed to control small droplets of water that can enter housings either after a small flood or when the housing is open and water drips in.

One of the more novel features of Seacam housing is

the special Eloxal Process external coating called Seacam Silver. This is an electroplating process for aluminum which uses an oxalic acid bath to deposit a super-hard coating on the aluminum surface. The coating finish is silver and slightly rough to the touch. Seacam users report that the Eloxal coating is so tough that the housing can be dragged across reef rock without scratching – and I believe it. You can see a closeup of the Seacam Silver finish in one of the following photos.



The 12-24DX with zoom gear, the 105mm with focus and AF/MF Shift collar, and the flat port with extension ring. The flat port and extension for the 105. Unlike other manufacturers, Seacam puts the focus and AF/MF shift controls on the housing





Functions

The following photos are pretty self explanatory. They show the layout of the controls for the S2 camera. Every camera control is available and placed in the

optimum location for the photographer. Seacam went to great pains to design gears, shafts, and levers into the housing so that external controls can be placed at the photographers fingertips. A good example of Seacam's

The buttons on the top and rear of the housing are plastic or plastic coated, rather than stainless steel. This eliminates contact of dissimilar metals which can result in corrosion.

incredible attention to detail is the rear command dial. Other housing manufacturers put a control for this dial on the back of the housing - that requires the user to take his or her hand off the handle to turn the control. With the Seacam, the control is mounted on the right side and the dial can be easily rolled with the thumb without taking your hand off the handle. The AE/AF Lock button is just as easy to operate and can be depressed with the thumb, leaving the index finger to control the shutter release.

Functions accessible

from the photographers fingertips are:

- Zoom
- AF/MF Shift
- Shutterspeed
- Aperture
- Shutter
- AE/AF Lock

Port and Lens Combinations

I received a flat port, a small dome port and two extension rings. Larger domes are available and the Superdome is recommended

for use with the Nikkor 12-24DX lens. Other housings I have used locate the manual focus control on the port. Seacam brings the focus control back to the left-hand side of the housing - so again - you don't need to take your hand off the handle to operate the manual focus. This also makes the ports simpler and more reliable as there are no through port holes.

Workability

This unit was designed specifically for use with the Fuji S2 and no other camera. The camera mounts to the front tray of the housing so the back can be easily removed by opening the locking lid snaps. There are only two snaps, one on each side of the housing and recesses in the aluminum make the snaps easy to open and close.

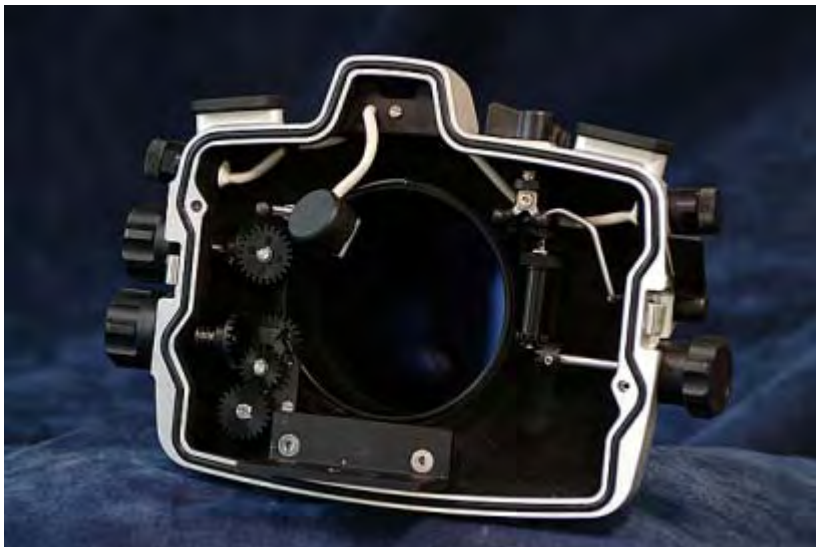
Out of the water, the camera is very easy to service. Since the camera is mounted to the front of the housing, it's not necessary to disconnect it from the tray for servicing. This is good, because an Allen key is required to unscrew the tripod



The Seacam and Aquatica housings, showing the size. Both units are set up for shooting the 60mm Micro.



The Flash and Exposure Compensation control, outside the housing. Note the Seacam Silver eloxal coating.



The housing front, showing the mounting tray.



Seacam uses an ingenious double-wiper system to access two buttons from one control. The photo above shows the control inside the housing for the Flash and Exposure Compensation.

mount. I believe that the housing leaves no room underneath the tray for a thumbscrew.

By opening the back, the memory card can be easily removed and changed. The

battery tray slides out from the left side of the camera, for a quick change of the AA batteries. Note that the CR123 Lithium batteries are NOT required for underwater shooting.

Seacam ports are threaded, as opposed to bayonet mount. The ports are gnurled to make them easy to grip for port changes. Because there are no gears on the ports, changing lenses is

especially quick as nothing comes away with the port or needs to be “meshed up” when the port is put back on. Note that Seacam does not provide a lens release button, so keep a small utensil handy

for pressing this button through the large port opening.

Getting in and out of the water the housing is lighter than any I have ever used. For macro shooting, strobes



The Seacam viewfinders are interchangeable and very easy to remove and replace with no tools required. Shown in-hand is the Pro viewfinder, with the S-180 alongside.

Some photographers prefer mounting the strobe arms to the housing handles. This is not possible with the handles Seacam provided, so a separate tray should be mounted to the housing base.

can be mounted directly to the dovetails on the top of the housing. The balance is good when set up this way and underwater, the rig weighs just ounces. One of the finest features of this setup is the S-180 viewfinder. It presents a very big and bright view of 100% of the viewfinder. This is an absolute dream for macro shooting with the S2 as it's easy to achieve critical focus. When you think about it, the S2's 1.5x crop factor, the S180 viewfinder, TTL strobe control, and perfect balance make this system what I'd deem the ultimate digital macro setup.

Conclusion

It's easy for me to say that this is by-far the finest housing I have ever used. The construction



The interior of the housing is flocked with a water absorbent material. The gears and control arms are precisely machined and fitted. Note the visual red moisture alarm light which also emits a loud beep.

and quality is superb, the design is extremely well thought-out, the housing balance and weight is perfect underwater, and the unit is just "dead-sexy" looking with the Seacam Silver finish. The strobe mounts and interchangeable viewfinders make it easy to set up for your style of shooting. Of course, all of this comes at a price that is out of reach for many underwater photographers. I would strongly recommend this setup for shooters that use their housing day-in and day out, as part of their living, and for folks that demand the very best.



A photo by Shan Hodges using the 16mm fisheye

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Doug Perrine

A Visual Story Teller

by Simon Brown



Doug who? Mention this name amongst friends and watch the blank looks and vague expressions return your expectant stare. Even divers, some of whom carry a camera underwater (and, in theory, should know better) scratch foreheads and mutter “the name sounds familiar” but fail to make any connection between the name and some of the most eye catching and rewarding images ever taken underwater.

Doug is a rare breed, making a living taking photographs underwater. Whilst most of us who carry a camera into the depths might dream (or

suffer the nightmare) of indulging in a career like this, Doug is out there doing it on a daily basis earning a crust taking images the world over provoking the reaction every photographer craves - “Wow!”. Whilst the image may well be remembered, gracing the living room wall or spread across the pages of many a magazine, the tiny acknowledgement of who took the picture is, almost without exception, nearly always overlooked.

*Bronze whalers, or copper sharks, Carcharhinus brachyurus, gulp mouthfuls of sardines, Sardinops sagax, as they charge through a baitball, showering fish scales and blood into the water, S . Africa
Canon EOS D60 digital in UK Germany housing @ ISO 200,
Sigma 14mm f2.8 lens, Canon 550EX strobe in UK Germany housing set to
high-speed mode, aperture priority auto exposure with -1.6 compensation, 1/800 sec. f5.6*



Juvenile Florida manatee, Trichechus manatus latirostris, Homosassa Springs, Florida

Nikon F4, 16mm f2.8 lens in Aquatica housing with 8" dome port, no diopters or filters. Underwater portion lit with Ikelite (225) strobe.

Sounds glamorous, exciting and fun - right? On a cold and windy day, when the weather had turned foul, I sat down with Doug to find out if this life was all it appeared to be.

After graduating from the University of Hawaii the idea of being paid to dive lured Doug to the Caribbean. Some dream. After putting in a 12 hour day 6 days a week, Instructors and Divemasters were earning less than what it cost to live in Grand Cayman. The cost of living wasn't the only problem. Teaching people to dive ceased to be a challenge after the second course, and saving tourists from drowning started to wear thin, so something was needed to keep Doug interested in the underwater world.

In an effort to boost a somewhat meagre income Doug added some PADI specialties to his instructor ticket, one of which was underwater photography. Figuring it was a good idea to understand a little of the background before teaching it, Doug acquired a Nikonos III, standard 35mm lens, macro kit and a cheap strobe. Photography had been pursued at high school, so the subject was not entirely new to Doug, but the first three rolls of underwater film came out black. Not an auspicious

start to a career, but the gauntlet had been thrown down.

As the photography improved the macro lens started to reveal an intricate, miniature world that Doug had never seen and somewhat naively thought that no one else had seen either, convinced that the pictures would automatically sell and be featured in the following month's National Geographic. Not quite, but the images caused a shift in Doug's approach to diving, within twelve months retirement from the instructor's scene was complete, with every dive now devoted to taking pictures.

By the early 80's Doug decided to return to university to study fishery science to prepare for a career where he could actually earn a living. The next five years were spent based on a sub-tropical island in the Florida Keys working towards a Masters in Fish biology. Doug spent one summer working for the government departments dealing with fish stocks, quickly becoming disillusioned with the process of churning through data, making recommendations and then finding that political decisions, divorced from the hard facts, set the fishing quotas. Other frustrations followed - one of the maintenance workers at the university flushed fresh water through the salt-water



*(Above) Sperm whales, socializing *Physeter macrocephalus* Azores Islands, Portugal (N . Atlantic)*

Nikonos RS, 13mm lens, ISO 100 slide film, ambient light (approx 1/125 f5.6)

*(Left) Tiger shark, *Galeocerdo cuvier*, riddled with bullet holes by "sport" fisherman ; only the jaws were used, Florida Keys*

Kodachrome 64 slide film (Nikon F80 or F90, 35-70mm f 2.8 lens)

plumbing system, destroying Doug's research with one turn of the tap.

This was not the career Doug had envisaged, but a friend told him what a great living he was earning with underwater photography, taking and selling images. Doug somewhat naively believed him, and three years later Doug turned in his first profit for a year of trading - \$25.

In the world of freelance photography the most persistent person who starts owing the least normally wins. With a cheap one-room apartment under one of Miami's freeways, no family to support and a rusty Honda for transport Doug owed nothing and was in an ideal situation to start. When the fridge was empty and the rent due next week, Doug would stop taking underwater pictures and

*Long-beaked common dolphin,
Delphinus capensis, leaping in the
bow wake of tanker off Wild Coast of
Transkei, S . Africa*
*Fujichrome Provia 100 F slide film,
Canon EOS 1N, 70-200mm f2.8 IS
lens (1/800 sec. f5.6) ambient light*

get temporary work, earn a few bucks and keep a roof over his head. The articles and images Doug took and managed to sell helped to pay off cameras and film, but the real strength was the bank of images being amassed. After a few years Doug could start to pick and choose the 'regular' employment, but it was five years of persistence and this yo-yo lifestyle pitching between paid jobs here and there and freelance photography before the latter supported Doug completely.

This glamorous lifestyle is not without risk. The trick with underwater photography is to get close to the subject, and this includes big predators. It was whilst trying to photograph a Caribbean Reef Shark that Doug picked up his 'shark bite' scar. Not quite a 'Rodney Fox', or even a 'Tony White' (when measuring the size of the bite mark) but this particular shark had been agitated by some nearby spear fishermen and took a dislike to having its photo taken. The shark decided to get too close for comfort, and the only line of defence



was the Nikonos, which was sacrificed as the shark lunged forward. One small bite mark on the hand, and a very scarred camera with a broken viewfinder were the only casualties. The hand healed, and the camera ended up being repaired and offered as a prize in an underwater photography contest. Incidentally, if

you have the bitten Nikonos Doug would love to hear from you.

You might be fooled into thinking that Doug's work revolved around larger animals; Humpbacks, Dugong, sharks and the like. Indeed, a quick glance through a children's book about sharks (brought home from school by my daughter) credited

around 25% of the images used within to 'Doug Perrine/Seapics' which reinforces that view. This was a misconception quickly corrected. For example; Doug was the first person to document and record the feeding habits of a tiny creature - The Vampire Snail. This rather aptly named beast feeds at night by forcing the snail

Atlantic sailfish, Istiophorus albicans
(c-r) La Guaira Bank, Venezuela
(Caribbean)
Nikonos V, 15mm lens, Ikelite (150)
strobe, ISO 100 slide film

equivalent of a hypodermic needle through the mucus cocoon formed by sleeping fish and sucking out bodily fluids. These days Doug admits that the eyes of a dive guide are needed to help him pick out macro subjects, or to put it another way larger creatures are easier to spot!

I met Doug at the Sardine Run in South Africa. For three years Doug had been coming to photograph the sardines and the predator/prey story that is played out as dolphin and shark gorge themselves in a bait ball, but never quite got the images he felt the subject deserved. A week before I arrived Doug had seen and photographed a bait ball, but this year Doug chose to shoot on digital instead of film. When shooting a bait ball the action is hectic, and more often than not all 36 images on a roll of film are used up in five minutes or less. Doug chooses to dive with just one camera (rather than the 'Doublet' technique of carrying many) so once the film is used he would fin back to the boat, de-kit and dry off, unload the used film and reload, find the baitball, get back into the water and start shooting again. This process would take around 45 minutes, but shooting digital has changed the process completely. How about shooting images until your air or adrenalin runs out? In one 45-minute dive Doug shot continuously, storing 250 individual images in the camera's memory. Having been bumped by numerous sharks and dolphin Doug ran out of air and adrenalin so returned to the boat. With no need to change film Doug swapped tanks and when back into the water to take another 150 images of the action. Try doing that using a traditional film camera!

So, after twenty years in the business is Doug ready to



retire and stop taking pictures? While the rest of us sat down to enjoy breakfast before the boats launched Doug would have been up and out at sea and taking pictures. Success in photography - topside or below - demands a high level of commitment and having witnessed Doug at work I think it is fair to say the urge to tell a creature's story on film (or digital) is still very much present in Doug. Doug freely admits (but few would agree with) that he "Has yet to master underwater photography" and is still trying to pick up that gauntlet first thrown down twenty years ago.

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Mola Mola © Robert Delfs

Taiji Dolphin Campaign

Sea Shepherd Exposes & Stops the Slaughter

Sea Shepherd, with the support of many activists, held protests in 28 cities around the world over the brutal annual killing of 22,000 dolphins and small whales in coastal towns in southern Japan. The thousands of letters, faxes and emails delivered a powerful global message to the Japanese Embassies and Consulates, that the insane slaughter of these gentle, intelligent marine mammals must stop. Future protests and direct intervention against these "dolphin roundups" will only escalate, unless these hunts are banned by the Japanese government.

Fishermen capture these dolphins by working in small boats, using sounding rods below the water's surface to interfere with the dolphin's sonar and navigational abilities. Once located, the dolphins are penned overnight then smaller skiffs drive the pods onto the beach where they are slaughtered and bled to death in the



There are times when a photo doesn't need a caption. Photo credit: Brooke McDonald/Sea Shepherd

bay, staining the water blood red.

Sea Shepherd's arrival in Taiji, Japan to document the annual October to April "Dolphin Roundup" exposed to the international media a 'horrific' hunt almost unknown to the

citizens of Japan and to the rest of the world.

On October 6, 2003, crewmembers of Sea Shepherd's Taiji Dolphin Campaign, after hiding out for several weeks in the cliffs overlooking the bay, filmed and photographed fishermen

slaughtering dolphins in Taiji Harbor. The world was stunned by the imagery when our story hit international front pages focusing condemnation and outrage against the Japanese government. Sea Shepherd crew were attacked, intimidated and their lives



This scenic cove near Taiji, Japan will soon become a deathtrap for 60 dolphins on Oct 6, 2003. A couple hours later, the scenic cove is red with the blood of dead and dying dolphins.

Photo credit: Brooke McDonald/Sea Shepherd



Whale Meat can be easily found in Japanese food markets.

Photo credit: Brooke McDonald/Sea Shepherd

threatened by local community members for their daring exposé. The Japanese authorities reaction to this was to post signs in the village and along the cliffs making it illegal to film or photograph the dolphin slaughter.

Sea Shepherd remained strong in Taiji for the next month and a half inspite of growing hostilities and tension directed at them by local fishermen.

They filmed and photographed at every opportunity, and continued their watch over the harbor.

Frustrated that they were still under orders by the Japanese government to avoid being filmed killing dolphins, fishermen started spearing the dolphins in the middle of the bay using their fishing boats as a shield.

On November 18, 2003, unable to endure



On November 18th, Sea Shepherd crewmembers Allison Lance-Watson and Alex Cornelissen dove into the frigid waters of Taiji Harbor to free 15 dolphins rounded up and destined for slaughter by local fishermen. Swimming for over an hour, they untied and brought down areas of the net encircling the dolphins creating escape routes.

Photo credit: Brooke McDonald/Sea Shepherd

another brutal slaying of dolphins, two crewmembers dove into the bay and swam out to free 15 dolphins penned in for slaughter for the next morning. Allison Lance-Watson and Alex Cornelissen swam for over an hour untying and bringing down sections of the net creating escape routes for the dolphins. A passerby on shore observed their activities and immediately reported it to the Taiji police who contacted several fishing boats out in the harbor. After a valiant struggle in the water, see video below, they swam to shore and were immediately arrested and held, in separate jails, for 22 days without charges, bail or communication with the outside world. Letters,

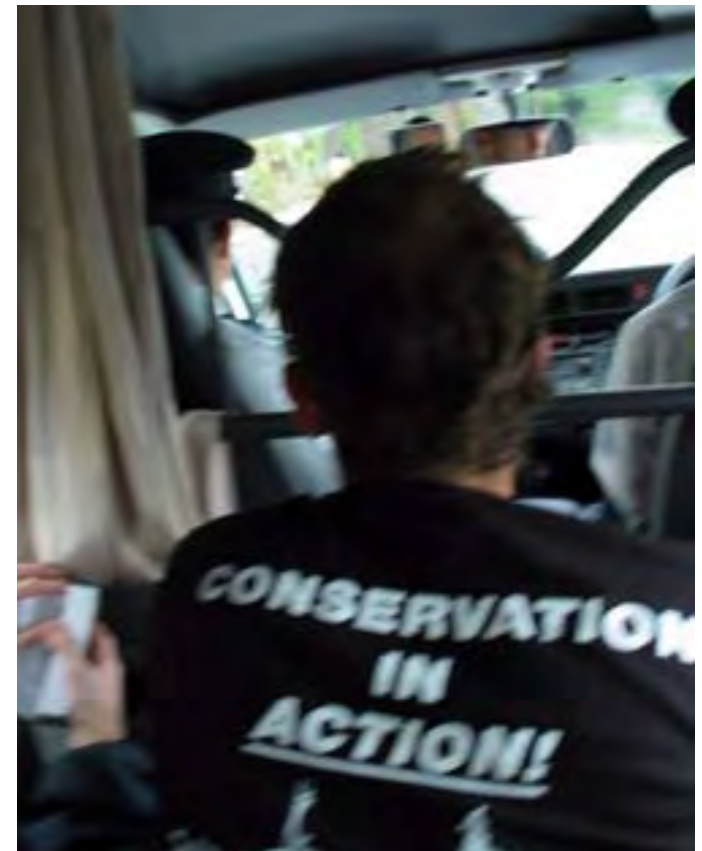


The fisherman, realizing their butchering has been documented, start threatening and moving towards the Sea Shepherd crew, who call the police when they are assaulted by the angry mob.

Photo credit: Brooke McDonald/Sea Shepherd

telephone calls, emails and faxes poured into the police stations, the Prime Minister's office, the Taiji Fishing Cooperative, and most importantly the office of the Governor of Wakayama. This is the office that gives fishermen annual approval to "roundup" and kill dolphins for the markets of Japan.

The overwhelming international support Allison and Alex received proved to be a powerful point of argument for our lawyer, as he negotiated with the Prosecutor of Wakayama for their release from jail on December 9th. In addition, Sea Shepherd was fined 800,000 yen (\$8,000US). Taken directly from jail, an entourage of police boarded



Rather than arrest the fishermen, the police arrest and carry away the Sea Shepherd crew on bogus charges.

Photo credit: Brooke McDonald/Sea Shepherd

them onto a plane in Osaka bound for Seattle and home to Sea Shepherd's flagship the R/V Farley Mowat berthed in Lake Union Drydock.

As they flew into Seattle on December 10th, the International Day of Protest Against the Japanese Slaughter of Dolphins, supporters were holding demonstrations in front of Japanese Embassies and Consulates in 28 cities around the world.



(Above) Japanese fishermen work in concert to load butchered dolphins into one of the catch boats. Over 60 are slaughtered in one day.

(Below) Some of the fisherman get into the water to assist the hunt. Baby dolphins, like the one here, are killed along with their families. Photo credit: Brooke McDonald/Sea Shepherd



Taiji has not seen the last of Sea Shepherd. We will continue our campaign to put pressure on the Japanese government to stop the killing of dolphins and small whales in the fishing villages of southern Japan.

www.seashepherd.com

Sea Shepherd Conservation Society



Please support Sea Shepherd's Taiji Dolphin Campaign, as we continue to focus world wide attention on the slaughter of defenseless dolphins and small whales in the coastal villages of southern Japan. To make a secure, confidential online donation with your credit card, please go to our on-line donation page:

<http://www.seashepherd.org/donate.shtml>

Approximately 20,000 dolphins are killed each year in round-ups like the one Sea Shepherd documented in Taiji. To voice your outrage, send a message by completing the form on this web page:

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Komodo in the Raw

with Mark Webster

Underwater photographers in search of new subjects and fresh challenges have long revered the infamous island of Komodo as perhaps the richest marine environment. Komodo's remote location at the confluence of the Pacific and Indian Oceans ensures that it has been visited by relatively few divers. There are no resorts on these islands and so the only way to reach the area is by live aboard boat sailing from Bali or Flores.

I had been planning a visit to the Komodo National Park for several years and at last my opportunity arose to join a photographic group sailing with Kararu Dive Voyages from Bali. The trip turned out to have a double benefit as the group included Dan Baldocchi from Light and Motion, Berkley White from Backscatter in Monterey and commercial photographer Jim Watt who were hosting a digital workshop which included a wide selection of the latest equipment. Although a digital conversion has been looming close for me I had yet to make the final jump, but watching these guys at work and the

opportunity of playing with a D100 in a Titan housing has convinced me that I have to make the transition.

After my first night at sea I was woken by an unusual mixture of sounds - the creaking of timbers of the traditionally built Bugis schooner and the hum of modern technology in the form of air conditioning to ensure a cool night's sleep close to the equator. The Kararu live aboard is a large boat that comfortably swallows 16 guests and a total of 19 crew and two or three dive masters who are attentive to your every need but in no way intrusive. The boat has been set up with photographers in mind, boasting a long external camera table (with even a padded top) with individual equipment lockers below. In the roomy saloon there is a large charging area with 120v and 220v supplies plus projection screen together with slide and digital projector. Daily E6 processing is offered for those who simply cannot wait to get home and there is a comprehensive library of species reference books to help identify your

Reef scene - With all the wonderful macro subjects to occupy you it is easy to forget your wide angle lens and the colourful reef shots you can take on almost every dive. Nikon F90X, Subal housing, 18-35mm zoom, Isotecnic 33TTL and YS30, Elitechrome EX, f11 @ 1/60.



Kararu live aboard - The Kararu Dive Voyages live aboard is a traditionally built Bugis schooner and a very large and substantial vessel. Our cruise was more than 250 miles in each direction and was made in complete comfort. She is well equipped and crewed and laid out with photographers in mind. Nikon F90X, 28-200 zoom, Elitechrome EBX, f11 @ 1/60.

subjects whatever your recording medium. The ensuite cabins are spacious and kept spotless and for extra romance or luxury you can select the double suite on the bridge deck.

Dives are made from two aluminium skiffs which are easily boarded from a stepped gangway on the starboard side. Each boat will carry a dive master but you are not expected to stay with the group unless you want to - solo diving is recognised as the norm here although the guides are invaluable for spotting the most elusive and best hidden critters. Tank tapping during the dive will ensure that a gaggle of photographers will appear to investigate the find and you can then wait your turn or return later in the dive. On the black sand 'muck' dives the guides would put chopsticks in the sand to mark an



Porcelain crab - Sea pens emerge from the black sand bottom at night and almost everyone of them will have one or more commensal inhabitants. In this case it is a tiny porcelain crab which catches nutrients from the gentle current. Nikon F90X, Subal housing, 105mm + Nexus wet diopter, Inon Quad flash, Fujichrome Velvia, f16 @ 1/125.

interesting find, but even so it would often take a few minutes to find the well camouflaged species!

The usual vessel routing is from Bali sailing east past the islands of Moyo, Santonda, Sangeang, Banta, Lawa Laut and then finally on to the jewels of Komodo and Rinca. Several dives are made en route which provide a taste of what is to come as you get closer to the Komodo National Park. The diving is very varied and the greatest contrasts are to be found when diving both the northern and southern sides of Komodo and Rinca. It is here that the two oceans merge and the northern side often offers the warm clear waters you expect in the tropics, whilst on the south you can expect rich plankton blooms, visibility which varies from 10-30m and chilly currents with temperatures ranging



Glassy sweepers - In the search for the exotic species it is all too easy to miss pleasing compositions using the numerous common species on the reefs. Nikon F90X, Subal housing, 18-35mm zoom, Isotecnic 33TTL and YS30, Elitechrome EX, f11 @ 1/60.

Saron shrimp - There are any number of attractive shrimps to be found on the reefs, but I had never encountered this very striking species before. He was hiding in a crack in the reef but was quite bold and inquisitive and would march backwards and forwards to get a better look at me. Nikon F90X, Subal housing, 105mm, Inon Quad flash, Fujichrome Velvia, f16 @1/125.

from 18-30°C! However, this is what propagates the density of marine life and you can experience anything from whale sharks and mantas to frog fish and tiny shrimps on feather stars in every colour of the rainbow. I should point out here that my whale shark encounter was whilst I was clutching a camera armed with a 60mm macro lens - the only sore point from the trip!

Reef conditions are equally varied ranging from black volcanic sands reminiscent of Lembeh Straits to lush coral encrusted pinnacles and walls, where it is difficult to see bedrock, to every combination in between. There are plenty of wide angle opportunities for even the most demanding photographer and there is a stunning manta dive at Toralangkoi off Komodo Island where these graceful creatures make repeated inquisitive passes close enough to touch. But it is when you stop to examine the macro world slowly and carefully that wealth of unusual critters, for which Indonesia is so renowned, slowly begins to emerge and will keep you engrossed for dive after dive.

One of the high spots of the trip is the time spent in Horseshoe Bay on the south side of Rinca Island. This is an idyllic setting with a sheltered anchorage behind the island of Nusa Kode. Volcanic slopes with dense foliage meet the shoreline fringed with pale sandy beaches. At sunrise you can watch



Komodo dragons wander down to the beach and patrol the water's edge for an easy meal before you prepare for the first dive of the day. There are several stunning dives within a 5 minute boat ride from the mooring which all have a unique character. Cannibal Rock is still fresh in my memory with its incredible density of coral and invertebrate cover and the discovery of exotic species like the *Miamira nudibranch* and tiny zebra crabs living in the spines of fire urchins. Yellow Wall of Texas is carpeted in yellow soft corals and huge sea fans whilst the strangely named *Grandma Bangs Bommies* are heaving in glassy sweepers and reef fish where we

also discovered a jet black giant frog fish. The reefs change again as soon as darkness falls and night diving should not be missed as this is when some of the most striking creatures make an appearance - more frog fish, ghost pipe fish, sea pens with commensal crabs, shrimps and gobies, stargazers and a host of other subjects which had the analogue photographers consuming their film in record time. I managed five dives a day whilst we were here and it still wasn't enough!

The Komodo area is also famous for its strong currents, but although we had some current on a number of dives the majority of sites offer protec-

tion from the reef which makes photography much less of a struggle. When we prepared for our day of manta diving at Toralangkoi the issue of reef hooks was an indication that it would be an interesting day! The dive is centered on a broad channel running between two surface breaking rock islands. At certain times the current can really rip here which is of course what attracts to mantas. However, even here it was possible to move out of the main channel into calm water and we found that the mantas were so inquisitive that they would swoop out of the current to investigate and come close enough to fill a fish eye frame. In fact the currents were far less of a challenge than I had anticipated and generally we would just move back down the reef into sheltered water. Whatever the conditions the boat cover was excellent and although we all carried safety flags or sausages no one had cause to use one.

Although I don't consider myself a total novice in the digital techniques, sitting in on the seminar was immensely instructive. Most of my experience with Photoshop has been pretty cursory so it was a real benefit to be walked through the major functions of the programme by those who use it daily. The boat is equipped with a digital projector, so workshops could be followed easily on a large



Jack fish - This resident school is on the wreck of the USS Liberty at Tulamben and tend to pack together as the current increases. This makes a great shot but maintaining position can be exhausting! Nikon F90X, Subal housing, 16mm, Isotecnic 33TTL and YS30, Elitechrome EX, f11 @ 1/60.

screen. However, perhaps the biggest benefit was the wide range of equipment which Light and Motion provided which included Olympus cameras in Tetra housings and Nikon D100's in the latest Titan housings. Being able to try before you buy is a real bonus, but I didn't find it all plain sailing. The D100 is a very different beast to the F90X and F100 when used underwater. The camera is based on an F80 body and so the viewfinder is smaller and darker and the auto focus much less responsive. You also

have to go back to making manual flash exposures, although the Titan housing deals with this particularly well. The handgrips provide control of all the major camera functions and adjustment of the flash output over a range of twelve power settings. So you can adjust aperture, shutter and flash power without moving your eye from the viewfinder or your hands. I was impressed with the system but of



Cat fish - small dense schools of these venomous little fish are found mostly on muck dive areas where they continually sift the sand for food. Nikon F90X, Subal housing, 105mm, Inon Quad flash, Fujichrome Velvia, f11 @ 1/125.

course everything is reliant on electronics which may not appeal to all. You very soon appreciate the benefit of seeing your shot immediately underwater, although it will take practice to determine if focus and exposure are in fact correct from the

LCD screen as the final image can look very different on a computer screen. So my metamorphosis is fast approaching, but the only concern that I have is that the changes in the market and equipment are accelerating fast and so choosing when to invest is a finely balanced decision. That said I am already fussing over whether to shoot RAW, tif or jpeg so there is no hope for me!

If you have the time on your return it is worth spending a few days in Bali which is simply a stunning island. Away from the hustle and bustle of Kuta and Sanur the countryside and soaring volcanoes offer a total contrast to the underwater world, although there is some excellent diving here as well if you have not had enough. I spent a few days at the comfortable Tauch Terminal Resort at Tulamben and could not get enough of the fantastic wreck of the USS Liberty, which lies just a few metres from the shore and is absolutely teeming with life. The beach diving here is really remarkable and there are even porters to carry your tanks and BC to the water's edge. This sounds extreme until you first walk across the volcanic cobbles on the beach and then you are eternally grateful for the service, which pampers your delicate western feet! The reefs to the north and south of Tulamben also offer great diving and photo opportunities and are easily

accessed by a short ride on one of the local 'jukung' outrigger fishing boats.

Despite the political woes of the area Bali is quiet and as potentially safe as any other location in the world today. I felt nothing but secure and relaxed and all the Balinese I met were warm and welcoming and grateful for those tourists making the effort to visit. Why is it that an entire country like Indonesia can be labelled as hazardous by our Foreign Office (they still advise against all travel) yet New York, Washington and London can suffer terrorist outrages but don't receive the same exclusion? There is a strange lack of logic to this situation but only you can decide where you will feel safer.

Information:

Flights: There are a number of routes from Europe to Denpasar in Bali via Kuala Lumpur, Singapore and Jakarta. I flew with Malaysian Airlines and Garuda Indonesia and found the journey to be very easy and the transit period at KL easy and relaxing. Both these airlines offer an extra 10kg for diving/sports equipment.

Time in Bali is GMT +8 hours

Voltage locally is 220V with European style two pin plugs

Air temperature 27-30°C and humid

Water temperature 27-29°C and 18-25°C in the cold currents - 3-5mm wetsuit advised plus hood



Digital workshop - Students pore over their pictures on laptops between dives. The boat is equipped with both slide and digital projectors for reviewing the day's results. Nikon F90X, 28-200 zoom, flash, Elitechrome EBX, f11 @ 1/60.



Digital selection box - Light and motion brought a wide range of equipment with them including the latest Titan housing for the D100. On the left is a Sea & Sea housing for the Canon D60. Nikon F90X, 28-200 zoom, Elitechrome EBX, f11 @ 1/60.



Komodo sunset - Indonesia is often referred to the land of fire due to the number of active volcanoes. However the sunsets will also set the sky ablaze and are irresistible. Nikon F90X, 28-200 zoom, Elitechrome EBX, f8 @ 1/30.

No visa required but passport must be valid for at least 6 months

Currently Bali has no requirement for anti malarial pills - But you should consult your pharmacist for the current situation and prophylactic

Currency - bring US Dollars to change locally into Rupiah. There are money changers everywhere, but exchange rates may be best in the banks and you can withdraw cash from ATM's

When to go: Live aboards sail to Komodo between April and Decem-

ber. Bali offers diving year round.

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Mark Webster

Mark Webster will be hosting a photo workshop with Kararu Dive Voyages in 2004/5. See website for details: www.photec.co.uk

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Minahasa Lagoon, Manado

with Peter Rowlands

“Would you like your baggage checked all the way through to Manado, Sir?” the attractive Singapore Airlines check-in lady asked. This was to be the start of a most relaxing week to assess a new dive resort at Minahasa Lagoon near Manado for a week in early December 2003.

No need to reclaim baggage at Singapore, cart it to and from the hotel and then have to queue up again for the next day flight to Manado. I was checked right through. Luxury.

Actually my trip really started from London Heathrow departure Gate 37.

Has anyone ever flown from Gate 1? Is there a Gate 1? Or is Gate 37 just a cunning ploy to save the airline’s fuel bill by making you walk most of the way to Manado?

Anyway after a 12 hour flight I overnighed in Singapore in the comfortable Golden Landmark hotel located far too conveniently near a shopping mall specialising in cameras and electronic goodies. I had to sow my wallet pocket up to avoid temptation but, in truth, the prices were not that amazing but the sheer spectacle of 5 floors of hustle and bustle was very impressive.

After a short 2 hour flight the next morning, during which the captain assured us that we had crossed the equator three times, I was met at Manado airport by the Minahasa Lagoon (I’m going to call it ML from now on) courtesy minibus.

Manado drivers wouldn’t last 5 minutes in London. They would surely be victims of a road rage attack within the first mile. Their regular tooting of the horn and tailgating would have resulted in a good thumping back home but it seems that this is the norm in this neck of the woods and, amazingly enough, it works well because everyone seems to know what the rules are.

Overtaking is something which can be done with oncoming traffic clearly in full view because, at the last minute and with no animosity whatsoever, the vehicle being overtaken and the oncoming one, about to hit us head on, just move slightly to the left and right and we go through a narrow gap between them. A quick toot of the horn says thank you and we continue on to tailgate the next vehicle in front of us.

Fortunately the kind ML people had provided a cooler box complete with cold water and more



Being the only guest I had no trouble booking a sunlounger. I sat on a different one each day in case they got jealous. The veranda deck looks out over the sea to Bunaken Island Marine Reserve.

importantly deliciously cold towels which I used to mop my sweating brow and cover my eyes at the same time. I must stress that my brow was sweating due to the tropical heat which takes a day or two to get used to rather than the driving antics. You soon get used to it, the antics, that is..

I was either reassured or hoodwinked by the driver that road accidents are rare in Manado and we soon approached the impressive entrance to the ML Dive & Tours Club. It is less than an hour’s drive from Manado airport and overlooks

the northern shore towards Bunaken Island Marine Reserve.

All of a sudden the flights, the overnight in Singapore and the entertaining minibus ride melted away as my baggage was whisked away and taken to my comfortable ‘cottage’ of which there are 15. I was greeted by Danny, the Resort Director and Antonio, the Dive Director and shown to my new home for the week.

All 15 cottages are identical with a large double bed and a twinbunk bed in a separate internally partitioned room so 4 could sleep



quite comfortably. Not all cottages have direct seafront access but mine did and the spacious veranda overlooked the soothing, lapping sea. The bathroom was actually enchanting. It was tastefully decorated and open to the air at the end near the shower. There was also a small bed of tropical plants here which gave me a feeling of being in the jungle whenever I had a shower. Lovely.

The rooms have a limited number of two pin round plugs for 240v electricity so I would suggest bringing an extension lead to cater for the needs of an underwater photographers' battery chargers, laptop power supplies and curling

tongs (please note, girls, a hairdrier is provided).

I forgot to mention that the walk from the main entrance to the cottages is via a rope bridge. Now when you're 8 hours jetlagged I'm not sure this is a good idea for it is a motion which takes some getting used to but fortunately I was on my own and couldn't create the resonance that a group walking in time would generate. Groups, please remember to stagger your steps over these bridges to avoid being thrown off the bridge at this early stage of your trip.

ML has a most stylish central bar and dining room area overlooking an oval



freshwater pool and out to the open sea towards Bunaken Island Marine Reserve. In the evenings it was most pleasant to sit on a lounger and down a cold beer whilst watching the sun go down. Very relaxing.

Right now. Down to work. I was here as a guest of ML to sample the delights of their newly built development. Next morning after an excellent buffet breakfast I met Ronnie and Ramon, the two dive guides, on one of their three dive boats. They are based on the Maldivian dhoni style (the boats, not Ronnie and Ramon) with benches either side holding 12 litre steel tanks and space underneath for your personal dive crate.

Overhead shelving was useful for dry items.

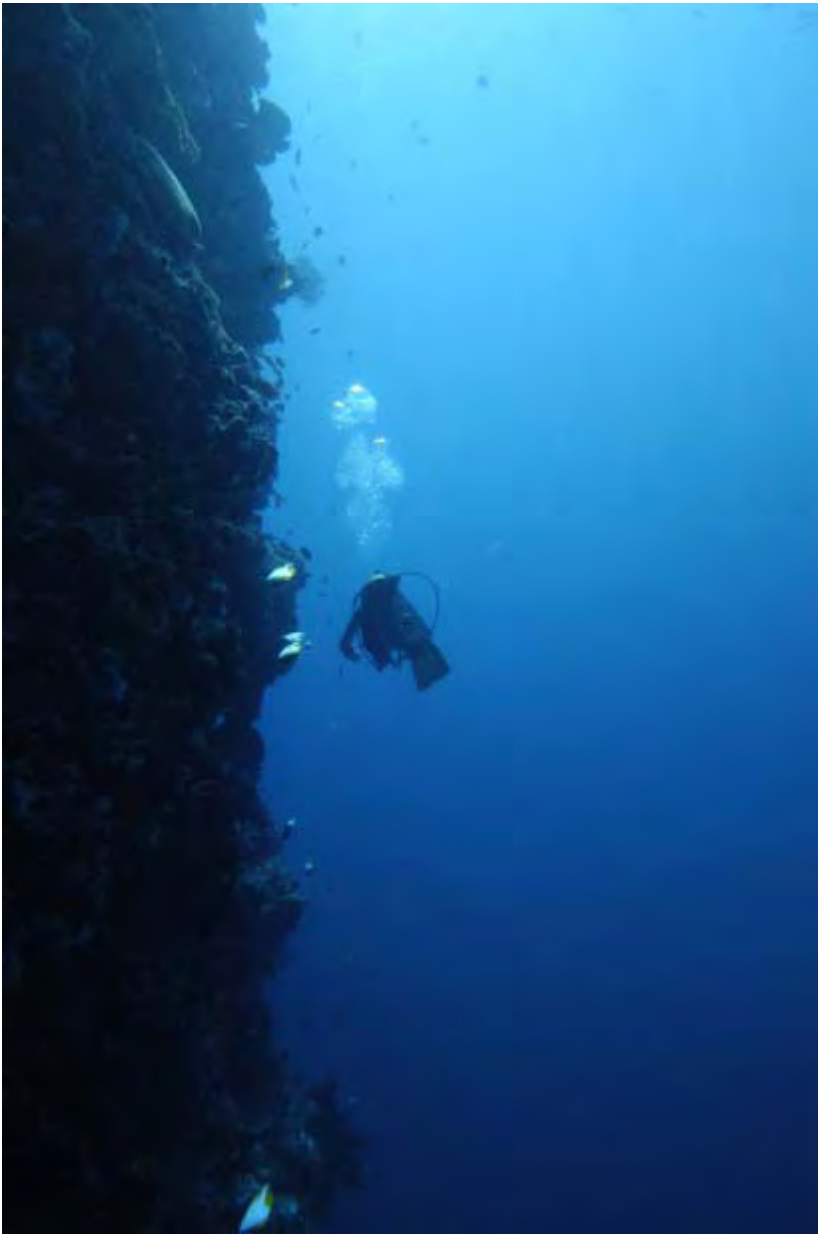
Access to the water is from two central, low sided open sections and re-entry is via a traditional dive ladder in which I managed to expose a design flaw as I insisted in being macho and climbing out with my cylinder and weightbelt still on. It is true the design of the ladder was somewhat lightweight but it is also true that it's easier to hand up your weightbelt and cylinder up first and then skip up the ladder.

Although it is possible to have really good shore diving right in front of ML, the reality is that it is just so much easier to go by boat even if it is just a hundred

*(Far left) The house reef outside the harbour are very healthy. 12-24mm lens.
(Left) A curious mantis shrimp shot with a 28-70mm lens.*

yards. You can change on board, have your camera toolkit to hand and plenty of clean fresh towels to dry yourself. It's a no brainer.

And so to the diving. Right in front of ML is what I would describe as above average muck diving. It's not just sand and rubble. There are outcrops of reefs and a variety of mini landscapes. In this area we found enough subjects to keep me happy for many a while. Mantis shrimp, leaf fish, ribbon eels both blue and black and, on one night dive, no less than six stonefish (three different species). We also saw a small frogfish on one night dive but never found him again and we were hoping to bump into his



The wall dive at Bunaken was absolutely stunning and we drifted over pristine coral for nearly an hour. Nikon D100, Subal housing, 12-24mm @ 12. Aperture priority available light @ F8. Blenny shot with 105mm macro 1/180th F22 manual exposure Inon Z220 flashgun



mum and dad at some stage but no luck there. A dark ghost pipefish was also the highlight of one dive.

Having sampled a couple of days' diving I casually mentioned to Danny and Antonio that they had chosen the location of ML very wisely next to such a productive house reef. I was amazed to hear them say that they had not dived the area before deciding on a location for ML. All I can say is that they struck it lucky without realising it. They have developed ML right in front of an excellent diving area.

This truth was confirmed the next day as we ventured just on the other side of the boat mooring breakwater. In complete contrast to the muck reef I was diving on a very healthy coral reef which sloped gently down to about 10 metres to meet a clean sandy seabed. Unfortunately the sun was not bright enough to make the reef sparkle (December, even in these strange climatic times, is considered the rainy season) but what I saw was very impressive and I was sure I would discover a striated frogfish or two sooner

or later. In truth I never did but this area is so undived that I'm sure that it is only a matter of time, as more keen eyes dive the area, that more exotic creatures will be discovered.

After three days of thoroughly absorbing diving and underwater photography around ML we made a trip to Bunaken Island Marine Reserve. This is a one hour trip boat away and is well worth it. I had one of the best wall drift dives I have ever had gliding past pristine, large, healthy coral, a myriad of fish life and the occasional large grouper which to me indicate an undisturbed reef. This sheer, uninterrupted vertical reef dive lasted a leisurely hour although I understand it can take considerable less time as tidal flows do fluctuate considerably.

After a sensible surface interval we did a shallow reef dive and I was amazed by the healthy coral landscapes and clear water. The temperature didn't vary much from 29° wherever we were which meant for a comfortable dive skin and minimal weights. At no time



(Left) We saw plenty of ribbon eels separately but these two were sharing accommodation. 28-70mm lens (Centre) The dancing shrimps were a challenge for the 105mm lens. F22 was needed to get depth of field. (Top) A cooperative ghost pipefish. 28-70mm lens.

did I shiver on any dive to whatever depth.

We discussed a third dive at Bunaken but to be quite honest I was keen to get back to ML and look for more creatures. It may seem strange but I preferred simplicity of the muck and reef diving at ML. That's no reflection on the splendour of Bunaken just an indication about me.

Believe it or not, it's actually quite hard to assess a new dive resort when you are the only guest there but that's what I was. You can only gauge the true performance of the staff and management when they've got people to serve. How they cope in the kitchen, how the dive boat picks up multiple underwater photographers who got separated by a hundred yards whilst they surfaced and how they treat underwater

photographers in general.

From my point of view, I was treated like royalty. "Mr Peter" this, "Mr Peter" that. I loved it. My dive bag was carried down to the boat on the first day and then, on the last day, brought back, rinsed and dried. I've never had that before. I got the impression that if I'd asked them to carry me to and from the boat I would have been hoisted on a strong back immediately. However I must stress that this is just my impression and there is certainly no mention of this service in the brochure.

ML is a brand new facility and as such is feeling its way in providing diving. The equipment they have is comprehensive and their staff are friendly and knowledgeable. However I think they will have to adapt slightly in some areas if they are

to attract underwater photographers who will take the photos which will promote future business.

The first adaption is one which I fully accept is unreasonable but dives are limited to 60 minutes maximum (or whatever that is in metric). Fortunately being "Mr Peter" and their only guest, these rules were relaxed so I had no such limitation but I can't help but feel that if ML wants to attract serious underwater photographers they will have to modify this to cater for our eccentric requirements.

The current local dive guides are very good, enthusiastic and keen to find what you want. However I had to encourage Ramon not to use a small stick to tap the reef to see if anything exotic moved. Once encouraged, it never happened again. The beauty of the digital age is that I was able to



This cuttlefish was trying to tell me something as its colour changing body pulsed rapidly. Maybe he (she?) just wanted its picture taken. Nikon D100, Subal D10 housing, 28-70 lens, Inon Z220 strobe. F11, half power.

show Ronnie and Ramon the best shots on my laptop in the evenings and this helped to build enthusiasm for finding new subjects. I was not, however, discouraged when they remarked that they'd seen better shots by other underwater photographers. I just took it as an indication that they should understand the fragile ego of an underwater photographer a bit better. In truth, they never actually said that. It was more like "Ooh" and "Aah, they're brilliant. So sharp, colourful and beautifully composed."

There is just one last point I

must make because I feel it is very important not only for visiting divers but also for the management to sort out. On a lot of dives my air was extremely dry. Now this is not something that I have ever really experienced. I have been in the Red Sea and heard such grumbles from fellow divers yet I had not noticed a similar problem. I put it down to them being too delicate, not macho enough or just plain wrong. However in this case the air was so dry my tongue was almost glued to the roof of my mouth and a rinse in salt water seemed an



Dive guides Ramon (left) and Ronnie (right) with "Mr" Peter on the dive boat.

acceptable alternative.

When I pointed this out I was told that the compressor is "automatic" and no more was done about it. When I pointed it out the next day that the air was still as dry (I always point out, I never complain) I got the same response. ML. If you read this. I don't know anything about compressors but the Bauer you have has a problem with its "automatic" setting. If anyone from Bauer is reading this, please contact ML to maintain your normally high reputation.

I guess nowhere is perfect but, for me, ML came pretty close to it. I

had a great week as their guest. It was a privilege to be able to dive a completely new area and I think it will become a major player in the underwater photography world as it provides an attractive combination of luxury accommodation, service and diving.

Dammit. I'm already thinking of taking my partner Debbie there next year.

Peter Rowlands

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IT'S ABOUT TIME

Time. It's a precious commodity. For most of us our trips abroad are measured in days and our time underwater in minutes.



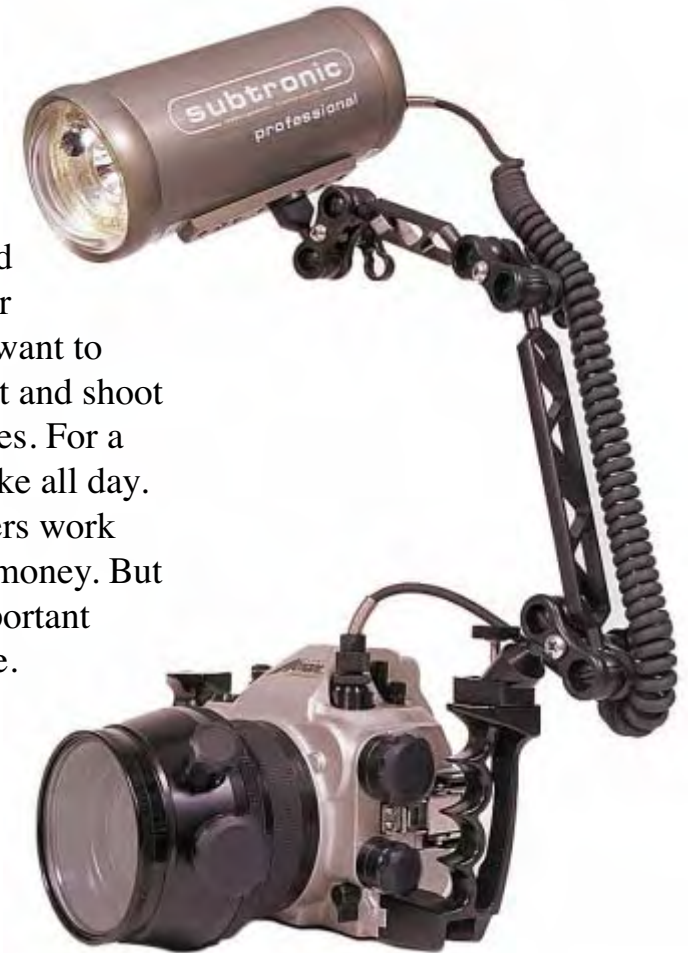
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Best behaviour

By Alexander Mustard

Many of us get into this game because we want a record of the marine life that we see during our dives. As beginners our goal is sharp, correctly exposed images; we judge our work a success when our images look like the ones we see in books and magazines. After a while, though, just reproducing what others have done before doesn't satisfy. We want our images to stand out from the crowd, have our stamp on them, be original. And this can be pretty tricky with coral reef subjects because almost every photogenic species has been photographed from just about every conceivable angle. So how can we take original wildlife shots?

A popular trend over the last 5-10 years has been to seek out the most diverse coral reefs, usually in SE Asia, and photograph species that few have seen before. Back in 1997 Greek photographer Constantinos Petrinou entered the Antibes Festival with a photograph of a tiny seahorse living camouflaged on a sea-fan. I remember staring in disbelief at his image and Constantinos walked off with one of the top awards. To this day, few divers have ever seen pygmy seahorses,

however it seems that the great majority of photographers have!

Several years ago, Peter Rowlands organised the Dive Sights 2001 photography competition and during the judging coined the phrase "Pygmy Seahorse Fatigue" - an ailment that results from having to judge yet another pygmy seahorse photo! So searching out new species and locales is a successful way to get original wildlife images, but it often doesn't take long for everyone else to catch up.

Furthermore, there is a finite number of photogenic reef species and an ever diminishing number of new locations - we need another strategy.

The solution I am advocating in this article is to not be content with just photographing the species, but to spice up our natural history images with some behaviour. An image showing even a common species actually doing something immediately stands out. We can see such everyday behaviour on every dive, at every dive site - coral reef life is always feeding, avoiding being eaten, living together, not getting on, cleaning etc. So how do we go about capturing it?



A pair of rock beauties spawning. A larger male rock beauty gently nudges a female, from his harem, during a spawning rise. Nikon F100 + 28-70mm. 2 x Subtronic Alphas on TTL. F13 @ 1/250th. Velvia.

Technically, taking a behavioural shot is pretty much the same as taking a normal fish portrait. The only difference is that our approach in water must be much more careful so that we do not influence the natural behaviour. Some of the most engaging fish portraits are made when a fish stares back at the camera, when it interacts with the photographer, and therefore the viewer when they see the image. This is not the goal of the behaviour photographer: we do not

want posed pictures, we are observers, we want candid images. Think of yourself as an underwater Henri Cartier-Bresson, observing life, recording life, but not interacting with it.

Patience is a great ally. We all know that underwater photographs must be taken close to the subject and to get in this zone we must play by the rules. Good buoyancy control, slow steady breathing and minimal flapping of arms or fins are essential.



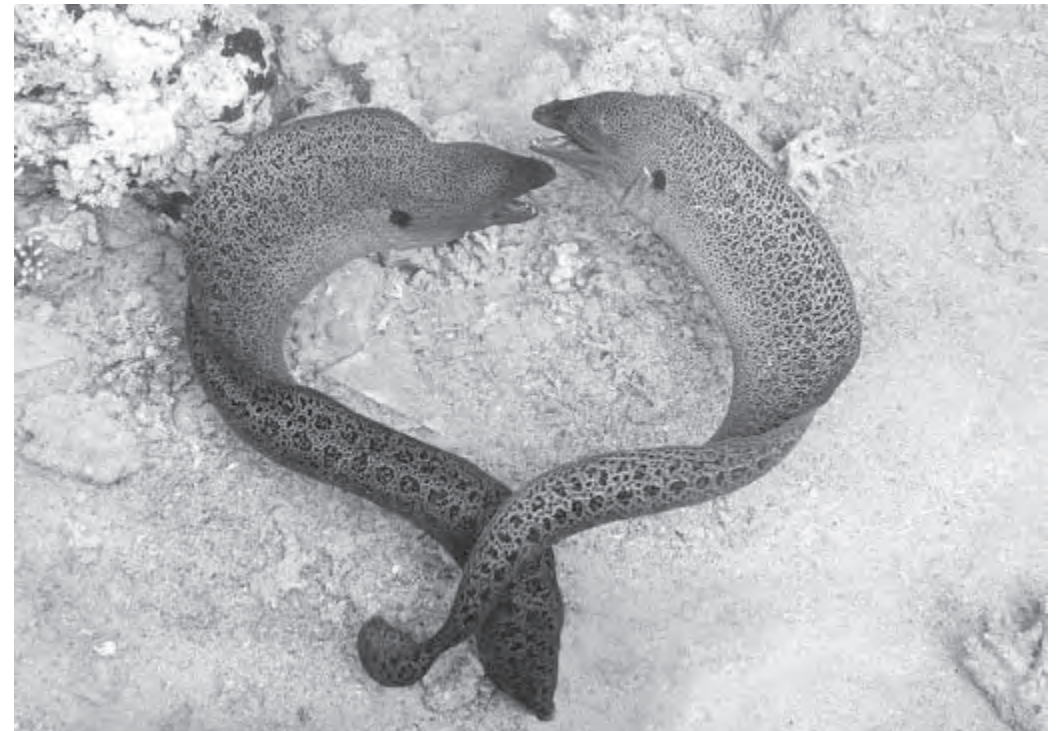
White bellied damselfish spawning. Benthic egg layers are probably the easiest fish to photograph spawning and are usually easier to get close to than broadcast spawners. Nikon F100 + 60mm. 2 x Subtronic Alphas on TTL. F22 @ 1/125th. Velvia.

Not having a buddy sitting right on our shoulder is also a bonus! Another great tip is not to rush to start shooting. There are two reasons for this: first, even if we have made the stealthiest approach the subject will still notice us and it needs time to settle back down to natural behaviour.

And second, experience has taught me that when I wait and watch I often see more than I originally thought was going on. I like to take a few minutes to appreciate the whole

picture and to think about the image I want. I also try to avoid staring at a subject. Ok, this maybe more of a superstition, but I find that subjects relax more quickly when I'm not looking directly at them.

Once we get set on a subject I recommend taking an early shot, so that there is a shot in the bag. However, we are trying to achieve a quality image and this quick snap shot is unlikely to capture the behaviour, be technically correct and be



Moray eels fighting. Even though photographs of natural behaviour should not show posed fish interacting with the camera this does not mean that strong composition is not still crucial to a successful image. Nikon D100 + 17-35mm. 2 x Subtronic Alphas on 1/2 power. F9.5 @ 1/60th.

pleasingly composed. This is the big difference between taking stills of behaviour and shooting video. The videographer is trying to build a sequence, while we are trying to produce a single image that captures the moment that tells the whole story. Of course if we want to publish a particular behavioural story we need a set of images, but as photographers our goal is always that single, definitive shot.

Having worked hard to spot the behaviour and get into place it is now important that we get THE shot. This is a good moment to glance around the camera to double check that the settings are right, the strobes are aimed correctly and nothing is flapping around in front of the lens. Then the fun part: watching the behaviour and pressing the shutter at THE moment. The ultimate nightmare is to shoot a fraction too

early and be waiting for our strobes to recharge while the action happens in front of us!

Composition is crucial. Just because we want our subjects to remain natural and unposed this does not mean we can get away with poorly composed images. It can be hard to remember to put effort into the composition of the image in the heat of the action. I have had to bin so many images that are technically correct and show the behaviour because they are not strong enough as images. I like to replace the exciting subject matter and, in my mind, replace it with the mundane and then judge if the image is still pleasing.

So what are the behaviours we should be looking out for, and how can we improve our chances of finding them? I suggest starting with easy to find behaviours like cleaning and symbiosis, before moving on to harder subjects such as spawning. Many people say that field experience is crucial and this just can't be bought. But I am not necessarily inclined to agree. There are many great naturalists and guides working in the dive industry, and their local knowledge is invaluable for this type of photography. The careful selection of the right dive centre or group trip is often the most important factor in getting behavioural shots. Books, magazines and the internet can also help us to educate ourselves to learn where and when to look for subjects.

I find behavioural photography particularly satisfying because not only does the final image tell a story, but there is usually quite a story behind the image. The more work I put in the more satisfaction I get out. My most pleasing images start with me searching through papers, books or emailing friends



Shrimp on crinoid. Symbiotic relationships are an easy way to start behavioural photography. Nikon F100 + 105mm. Sea and Sea YS120 and YS30 on TTL. F16 @ 1/250th.Velvia.



Anthias and young cleaner wrasse. Cleaning is an easy behaviour to find and approach. Larger predators can make dramatic subjects with small cleaner between their sharp teeth, but they are already well photographed. Look out for unusual species as cleaners and clients and characteristic postures. Nikon F100 + 105mm.Nikon SB80DX on TTL. F11 @ 1/250th.Velvia



Star coral spawning. Most photographs of coral spawning are macro shots because that is the easiest thing to do at night. So I was determined to try wide angle to make my images stand out. Nikon D100 + 17-35mm. 2 x Subtronic Alphas on 1/4 power. F914 @ 1/125th.

for information. A good example was photographing mass coral spawning. Corals are not really challenging subjects. They rarely run away. The problem of photographing them spawning was knowing when to be in the water to get the pictures - since the species I wanted to photograph only spawns on one night during the year and for only about 20 minutes.

The timing of spawning is controlled by annual cycles of temperature, lunar cycles of tides and

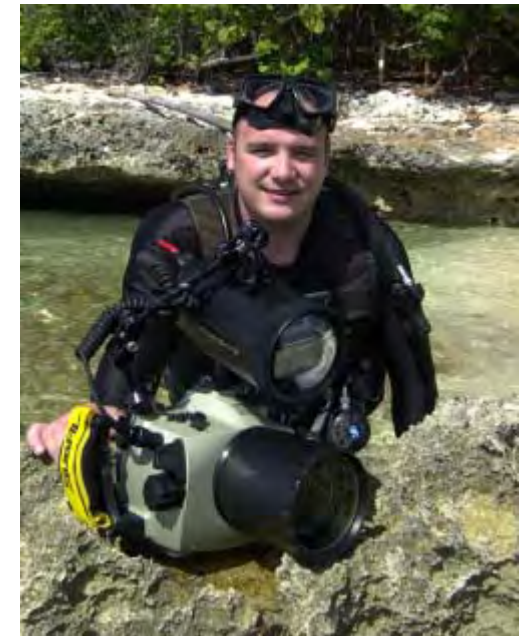
daily cycles of light. So I had to make my prediction, then the gamble on booking a holiday and flying across an ocean. And even if the corals actually spawned I would only have one shot to get the images. Thankfully everything went to plan, my spawning prediction was three minutes out. The resulting images are amongst my favourites because of all the work that went into them.

Finally, as a photographer of coral reefs I am always keen to avoid

disturbing the resident animals, leaving the reef as I found it. Being able to observe the natural behaviour of the animals is as good a measure as any that our presence in their home is not an intrusion.

I hope that on your next visit to a coral reef you spice up your wildlife images by recording the details of the everyday lives on the reef and enjoy the privilege of capturing the inhabitants on their best behaviour.

Alex Mustard
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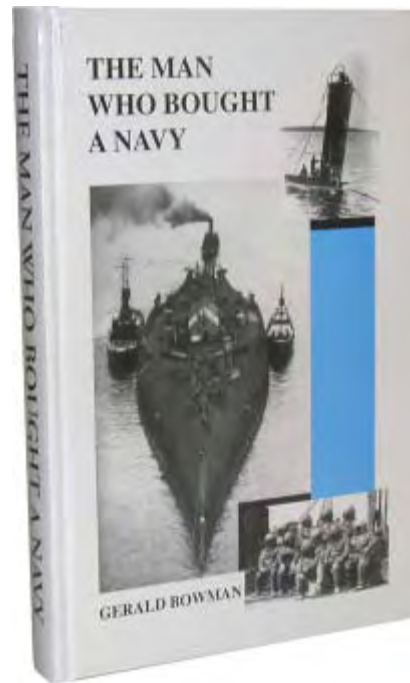
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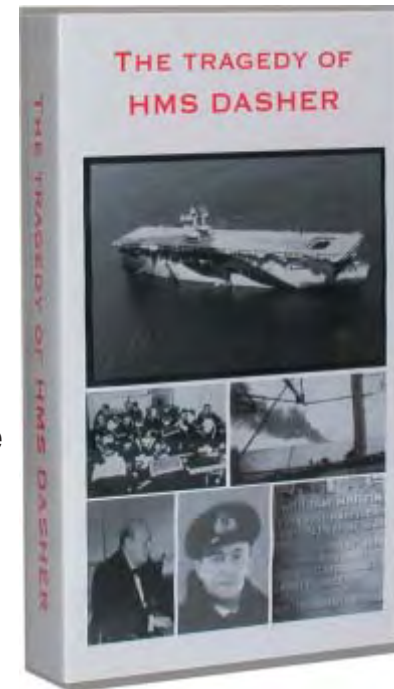
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The great digital debate

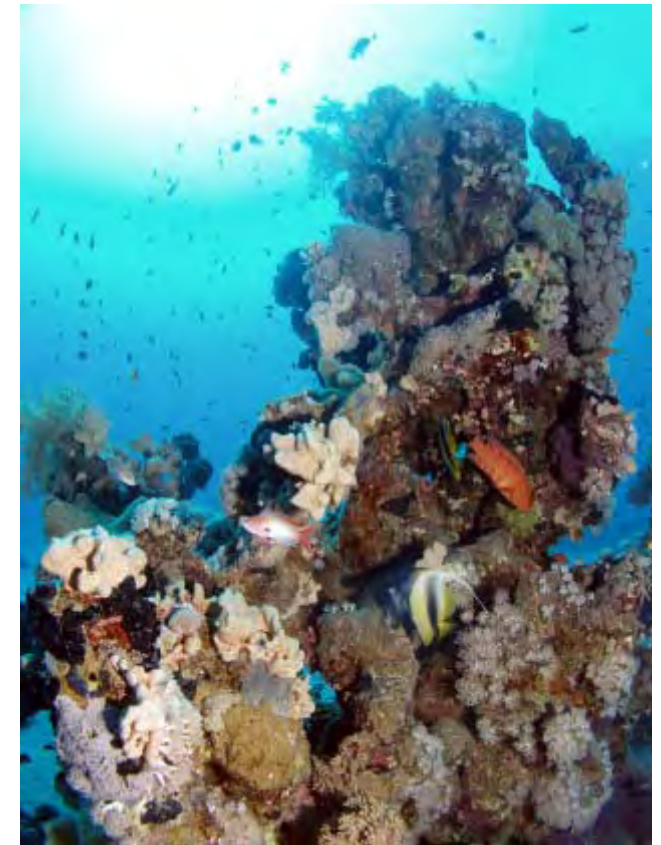
An experiment in comparison
by Will Postlethwaite

Even the most conservative of underwater photographers are now wondering whether they should take the plunge and go digital but the Catch 22 is that there is no simple way to try before you buy and the switch is not cheap.

ScubaDiver Australasia and the pages of UWP have, more than most, helped inform us about digital photography underwater. However, for those of you who have not yet ventured into this world, here is something which would have helped me before I went digital, some direct comparisons with film to see whether we are looking at like for like or parallel media.

I have tried to be objective as possible and, while I realise that I am not really comparing two directly similar systems, the points highlighted are fairly general for both media. For those of you looking for a definitive conclusion of which is best I do not think there ever can be one. There are personal preferences that will outweigh one aspect or another depending on the user. This piece hopes to add to existing information to hand and aid your decision, which might even end up like mine. I have found that I want both.

The film equipment used was a Nikon F90X, Nikkor 20 mm, Subal housing, 2 Sea&Sea YS120 strobes, 2 sync cords, Fuji Velvia 100F, manual exposure.



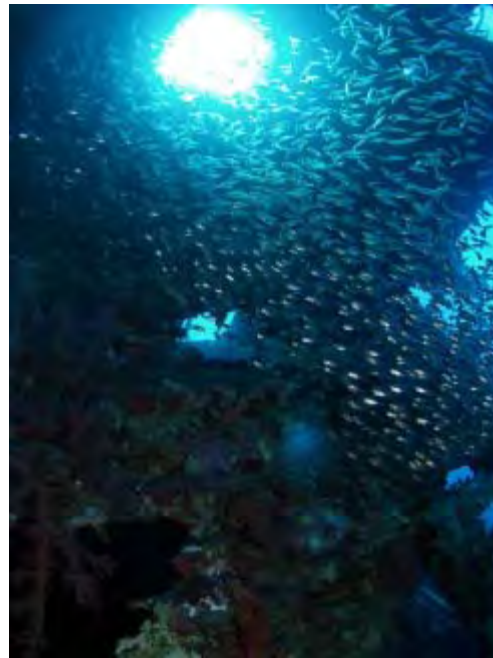
The first thing to notice is that the frame size/shape is different. This is why existing lenses tend to work like 150% of their stated focal length when attached to a digital camera.

The film shot is a prime candidate for TTL but most digital cameras either do not have this capability or have an approximation. This may be due to change with new generations of camera but with my set-up this was definitely not the case. Trial and error is the way.

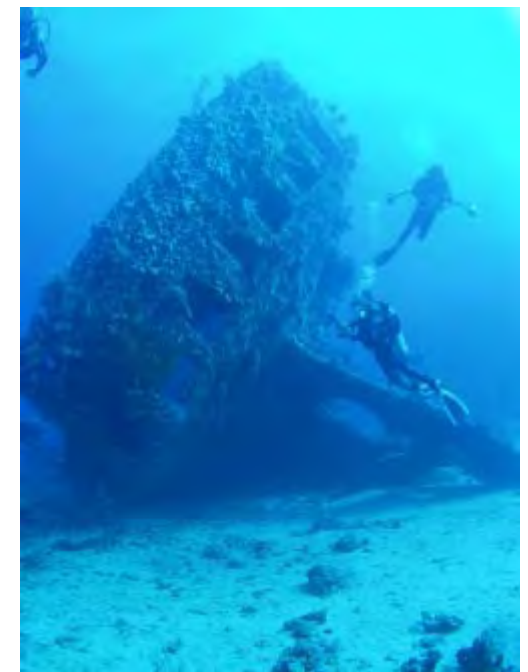
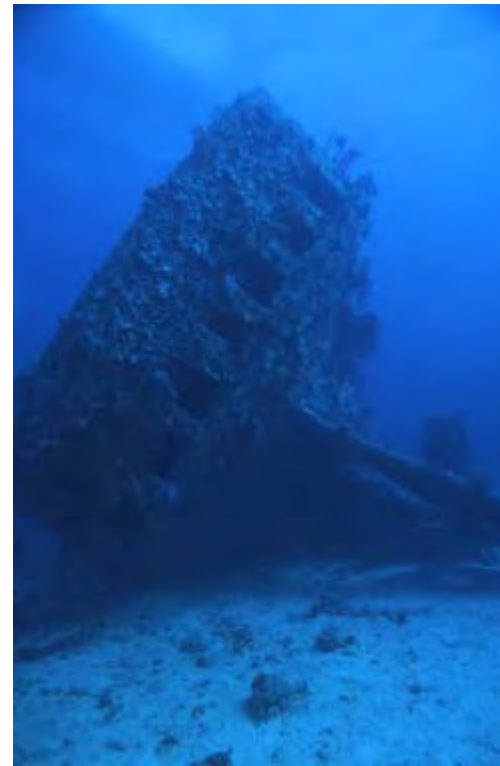
Although it is difficult to illustrate on the pdf pages of UWP the difference in detail/resolution between the two media, fine grain film like Velvia is still superior but 5-6 megapixel cameras shooting in raw format give excellent results to A3. The images from the digital camera produce TIFF files of around 18Mb whereas our slide scanner can produce files of 29Mb.

The composition is slightly different but the sunburst does illustrate a limitation in the digital armoury.

Where you have areas of large contrast rings or blocks of colour tend to be produced rather than a smooth transition. I am told that Photoshop solves this problem!



Film left, digital right



Film left, digital right

Composing a shoal of glass fish can be tricky and you need to be ready on the shutter release. Most high end digital cameras now have a good, quick response and virtually no shutter lag but check before you buy as some can have a 1-2 second delay. This will drive you mad.

I got rather frustrated here with the digital camera. As you can see the film picked out the shape of the shoal and the wreck all in good contrast. Try as I might with various degrees of sunburst and minimal flash I still ended up with no contrast and thus the fish are lost in the detail of the background.

Film 1/60th f8 2 strobes full. Digital 1/30th f8 1 strobe full

The digital equipment was an Olympus 5050 Zoom 5 megapixel, INON 100 deg wide angle lens, Ikelite housing, 1 Sea&Sea YS90 strobe, 1 fibre optic slave from internal flash, ISO set to 100 in Raw mode, Auto exposure.

The use of two powerful strobes with the film camera and only one with the digital is not really ideal for comparison purposes. However from the results you can see that this matters less than you might think. The low light capability of digital cameras

These are both ambient light shots. As underwater photographers we know that what the eye sees is not what the film does. Colour is absorbed over very short distances but our brain is clever and does some interpolation and guess work with similar tones. This the film cannot do but the digital camera can. As you can see here the film image is just tones of blue and somewhat dark. The digital image however is much lighter and with the greater colour depth seems to illustrate more detail. It looks like it did with the naked eye.

Film 1/60th f5.6 ambient. Digital 1/40th f5.6 ambient.

is a great strength and in fact two YS120 strobes would far too powerful for them. I also have to admit that I 'cheated' a bit. Although being told that flash systems of digital cameras are all very different and require new strobes I found that, with the internal

flash set to 3slave2 and a \$15 fibre optic cable fixed through the blanking plate and attached to the slave sensor on the YS90, I could shoot happily on full or 1/2 power with no problems. The YS120 works like this too!

The equipment was then taken



*Film left,
digital right*

One of the delights of the Red Sea is the colour of the water. With no river run off etc. the clarity gives a deep blue backdrop to wide angle images. In these examples you can see how the Fuji Velvia gives a rich blue whereas the digital favours the reds and yellows. At this point I should say that I had the digital white balance set to auto. Should I want to adjust this manually as a pre-set, or change it afterwards in Photoshop, I can. But here I am aiming to show



things in their raw state. A small difficulty I found with the compact style of digital camera is that you frame shots with the LCD screen not through the viewfinder. With this type of shot it can be quite hard to see all the detail. With SLR digital cameras and housings you look through the viewfinder and thus through the lens in the normal way and the image only appears on the screen after you have taken the shot. Film 1/60th f8 2 strobes full. Digital 1/30th f6.3 1 strobe full



*Here you have the same situation as the previous shots with more colour in the film image but greater depth of image in the digital. However I think this time the digital looks a little washed out in comparison and the darker background in the film image emphasises the turtle.
Film 1/60th f11 2 strobes full. Digital 1/30th f8 1 strobe full*

for a week in the perfect wide angle conditions of the northern Red Sea where my wife Demelza shot with the Nikon and I shot many of the same shots with the Olympus.

One last general point is expense. The Olympus setup cost around U\$2000 while the Nikon setup was more like U\$6000. Admittedly a Nikon digital SLR housed setup will set you back considerably more but view the choice as more between a Nikonos and an SLR. Also remember that you will need big memory cards and a laptop to download and properly scrutinise your images for

sharpness and exposure.

All these images are wide angle which I think is where strength in the digital revolution lies. In the past judging exposures to balance light in new and ever varying conditions has been the underwater photographers' art.

With results instantly viewable and then reviewable after the dive I found that I was really encouraged to experiment. This in turn encouraged Demelza to experiment with the film camera. We now also know the strengths of each system and take images accordingly.

The conditions in the Red Sea were perfect but back here in the UK, where the sun shines intermittently and the visibility is variable, the minimal strobe power needed with the digital is where it should come into its own.

We shall be trying the same experiment here in Cornish waters soon.

Will Postlethwaite

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Back to basics

Artificial light

by Peter Rowlands

Water acts as a strong filter which mutes and alters the natural colours of underwater subjects. Artificial light, in the form of electronic flash or strobe, is added to counteract this and restore the colour and detail.

Artificial light sources

Electronic flash/strobe is the most widely used artificial light source in still photography. These devices give a bright pulse of light which, when timed to coincide with the shutter being open, gives the impression of the photograph being taken by daylight. The typical duration of the flash is around 1/1000th of a second and will be even faster with TTL systems used at wide apertures.

This bright pulse of light must be taken into account when calculating the correct exposure and the aperture you choose will depend on:

- A. The power of the flash
- B. The flash to subject distance.

The power of a flash is denoted by its GUIDE NUMBER. The higher the guide number, the more powerful the flash. Most modern guide numbers are quoted for use with 100asa film at flash to subject distances measured in metres.

To find the correct aperture, the following formula is used:

$$\text{APERTURE} = \text{GUIDE NUMBER} / \text{FLASH TO SUBJECT DISTANCE}$$

For example, if you are taking a picture with a flash with guide number 32 of a subject 2 metres from the flash, the aperture required will be $32/2 = F16$.

The same subject 3 metres away would require $32/3 = F11$ (figures rounded up for simplicity).

The underwater guide number will depend on the water clarity but as a general guide for use in clear water, the guide number should be divided by 3 which will effectively means an aperture three stops wider than on land. This is a broad generalisation and will vary considerably depending on the water conditions.

Most flashguns are supplied with an exposure scale but, if not, it is easy to calculate one by using the GUIDE NUMBER formula:

UNDERWATER EXPOSURE CHART FOR A 32 GUIDE NO LAND FLASH

Land guide no is divided by 3 for the "water factor".so Underwater Guide No = 10.67

Flash distance (m)	Guide No	Nearest aperture
3	3.56	4
2.5	4.27	4
2	5.34	5.6
1.5	7.11	8
1	10.67	11
0.5	21.34	22

Flashgun manufacturers test their flashes under optimum conditions to give the best results so be advised to do an exposure test for your particular flash. A swimming pool will do with the subject in mid water away from the sides of the pool.

Always remember that the aperture will depend on the reflectance of the subject and you may need to make adjustments to take this into account.

Using different film speeds

To select the right aperture if film speed is altered, first calculate the difference in film speed i.e. 50asa is 1 stop slower than 100asa so all apertures will need to be opened up by 1 stop.

Similarly going from 100asa to 200asa is a 1 stop increase so all apertures have to be closed down 1 stop.

Multi power flashguns

Some flashes have variable power settings and they are usually:

Full	=	Full output
1/2	=	1 stop less
1/4	=	2 stops less
1/8	=	3 stops less
1/16	=	4 stops less

TTL flashguns

The output of TTL flashguns is controlled by a sensor in the camera which reads the amount of light falling on the film during the exposure. When enough light has fallen on the film the output of the flash is stopped and the remaining charge stored for the next exposure. In this way, at small flash to subject distances, a TTL flash will give many more times the number of flashes than at full power.

TTL flashguns almost eliminate the need to make any manual calculations. All you need to know is the flash to subject range over which the TTL will operate correctly for a given aperture.

Auto flashguns

These are very similar to TTL except that the sensor is in a separate housing and reacts to the amount of light being reflected from the subject rather than the light falling on the film. In practice they tend not to be as accurate as TTL.

Slave flashguns

These flashguns have an additional sensor which triggers the flash

when there is an impulse of light i.e. from another flash.

They are useful at short flash to subject distances for adding more light or light from a different angle to achieve a more pleasing result.

Angle of coverage

For general use you should use a flash which covers at least the same angle as the lens you are using. Using a wider angle flash than the lens you are using will reduce the need to point the flash precisely.

Exposure for two flashguns

An additional identical power flashgun, when fired from the same position as the first flash, will result in 1 stop more exposure.

Placing the flash in a different position will vary this slightly but for simplicity's sake always close down by 1 stop when using another flash of similar power.

Balanced light exposures

The most effective shots are taken with balanced light where the available light and artificial light are arranged to give the same exposure.

To do this requires the following:

1. Take a light reading of the background
2. Estimate the flash to subject distance of the foreground subject

Then either

1. Move your position so that the flash to foreground subject will give a similar aperture as that for the background or
2. Without moving, adjust the power of the flash to achieve the correct aperture

Peter Rowlands
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- Uw photo techniques** - Balanced light, composition, etc
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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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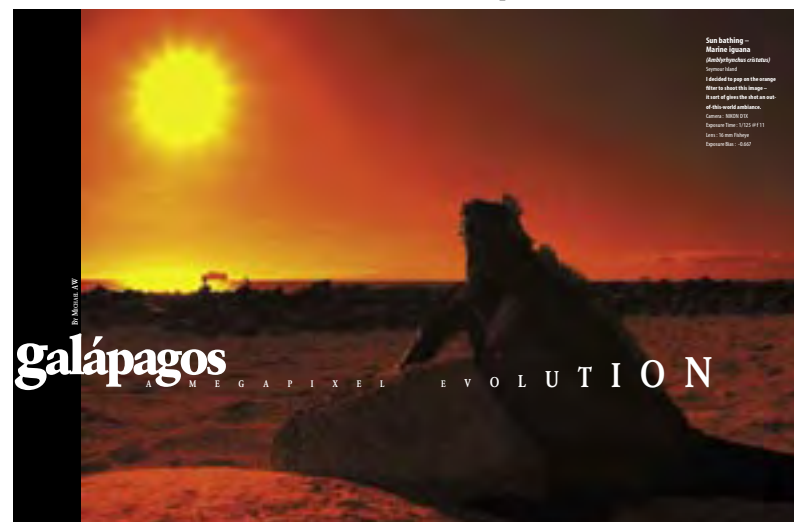
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