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29 IN-DEPTH TESTS

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Welcome to your all-new Digital Camera

The definitive guide to SLR photography

Welcome to the new-look *Digital Camera* magazine! First up, a big thanks to everyone who gave me such positive feedback about last issue's redesign – we've noted all your comments and suggestions.

Hopefully you'll enjoy this issue just as much. Over the next 172 pages you'll find a wealth of inspirational photography tips and techniques. Our new-look disc, meanwhile, has more easy-to-follow Photoshop lessons, and there's plenty for more confident Photoshop users too. And because it's prime holiday time, you'll find a free, 52-page travel photography book in the bag.

Other highlights include an in-depth look at wide-angle lenses, a guide to macro photography and up to 50% off the price of Virgin Balloon Flights (see page 29). Enjoy the issue and stay in touch!

Geoff Harris, editor
geoff.harris@futurenet.com

Meet your photo experts

Ben Brain
Deputy editor
Ben's an ex-pro who built his first darkroom when he was just 12!



Paul Grogan
Technique editor
Our latest recruit makes his debut as The Photo Fixer on page 74



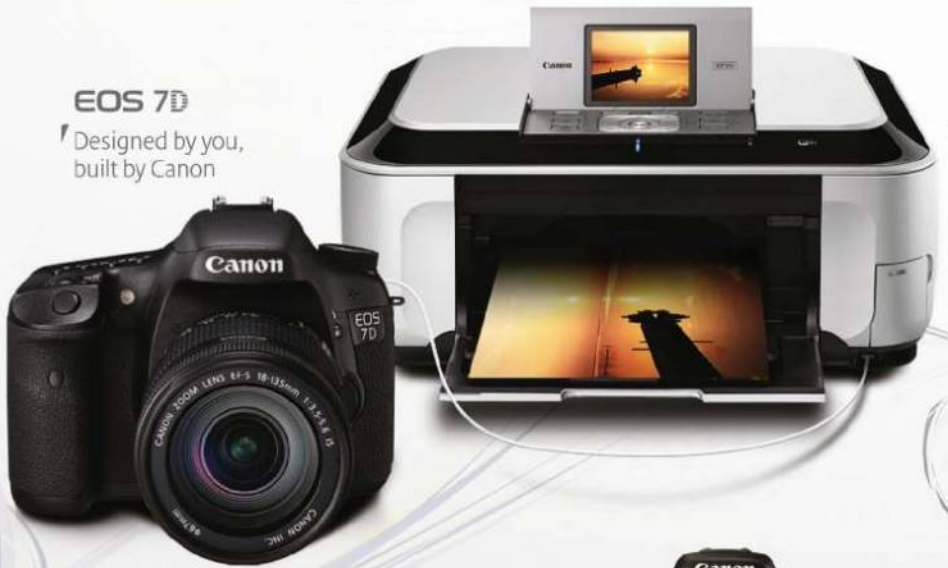
Ali Jennings
Digital editor
Ali's our disc mastermind and an authority on photo-editing



George Cairns
Technique writer
George's disc tutorials make Photoshop a joy to learn

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What are TIPA awards?:

The Technical Image Press Association (TIPA) is comprised of 29 member photo and imaging magazines from 13 countries. Taking into account innovation, ergonomics, design, ease-of-use, efficiency, price/performance ratio, as well as other guidelines, TIPA editors meet once a year to vote on imaging products to help photo enthusiasts and professionals make the best purchasing choices.

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Story of the Cover



Urban Lizard

Christopher Schlaf
Michigan, USA
www.pbase.com/christopher_schlaf

This issue's stunning cover shot may look like it was taken in the hidden depths of the rainforest floor, but it was, in fact, taken in a basement in Michigan.

"It's my friend's pet," admits photographer Christopher Schlaf. "There were no special effects – the branch was part of his cage and the green backdrop was created by plastic leaves."

The set-up was simple. "I just set my D-SLR on a tripod and focused manually on the lizard," says Schlaf. "There were no off-camera flash or lighting set-ups involved. I just took over 100 shots and this was my favourite."

"I was lucky with the light, which I enhanced in Photoshop," Schlaf explains. "I'm always trying new ideas, otherwise I get bored. I shoot in RAW so that I have flexibility at the editing stage, and I sharpen first (I know you're meant to do this last!)."

Canon EOS 40D with Canon EF 180mm f/3.5L USM Macro lens; ISO320; 1/13 sec at f/5.6





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10 Things to Try Right Now
Need inspiration to get out and about with your camera? Turn to page 26 for some great ideas – from trying your hand at cricket to cool cloud effects and more!

Digital Camera
ISSUE 102/AUGUST 2010

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Perfect photos

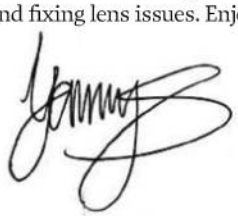


Welcome to your new and improved *Digital Camera* disc. Not only have we redesigned the disc to make it easier to use, but we've also included lots of great new content.

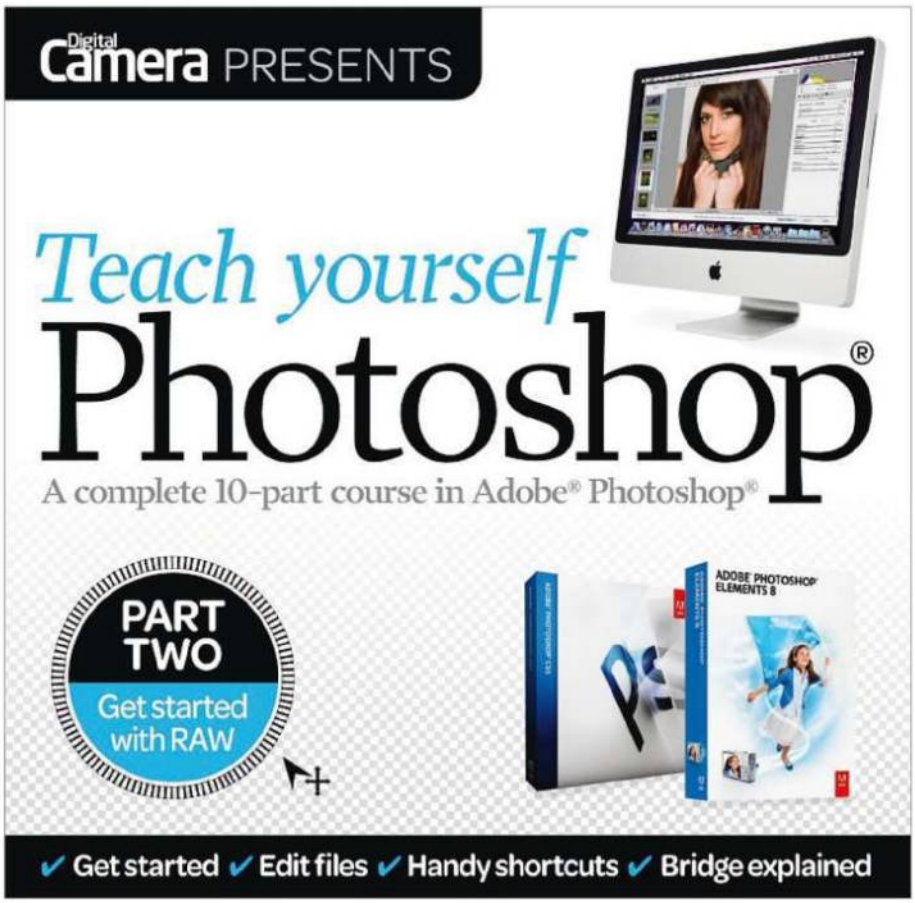
First up is Teach Yourself Photoshop – a new ten-part series that builds up into a complete video reference library. For part two of the series, we're helping you get to grips with editing RAW files.

The advantage of shooting RAW is that you get the full, uncompressed image as the camera records it, so you can maximise tones and details with Photoshop. But it's not always obvious how to do this, which is where our videos come in.

If you're already confident with RAW editing, this issue's Photoshop School is all about recreating creative lens effects and fixing lens issues. Enjoy!



Ali Jennings, digital editor
ali.jennings@futurenet.com



ON THIS ISSUE'S DISC...

Teach Yourself Photoshop with George Cairns



1 Get started with Camera Raw



2 Adjusting your shot's white balance



3 Editing photos in Camera Raw



4 Setting camera preferences



5 How to edit multiple RAW files



6 Camera Raw in Photoshop CS

Magazine support videos



1 Fix wonky verticals **with George Cairns**



2 Remove ugly vignettes **with George Cairns**



3 Get a fish-eye effect **with Ali Jennings**



4 Get sharp macros **with Ben Brain**



5 Sony NEX-5 review **with Ali Jennings**

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★STAR LETTER



See our Buyers' Guide on page 142 for our definitive verdicts on the latest SLRs and hybrid cameras



D-SLR AGEISM SHOCKER

I found your 'opinion' of the Canon EOS 50D in issue 101 (July 2010) a little disconcerting. This camera is a year old. Would you describe a car that's a little over a year old as 'showing its age'?

I'm a proud owner of this camera and it's a great piece of kit. It's not the latest technology that makes a photo, it's the photographer.

Lars

We like the 50D, but things move fast in the D-SLR world and newer models are snapping at its heels, offering HD video (for example) at a similar price. The 50D's great, but expect an upgrade soon.



WIN A NATIONAL GEOGRAPHIC NGTT2 TRIPOD

Lars wins a tripod and bag worth over £100. For more information on this and other National Geographic kit, visit www.geographicbags.co.uk.

RAW CORRESPONDENTS

Brian Walbey's letter (issue 100, June 2010) was pretty scathing about RAW processing. However, I agreed with every word. And what's more, so does top pro Tom Ang, who described RAW a few years ago as a "waste of time".

Photographers need to make up their own mind if RAW suits their way of working or not. But please refrain from ramming it down the throats of people like me who have decided that it doesn't.

Mick Bidewell

I've just read the letter from Brian Walbey and disagree. Yes, it takes longer to process RAW, but you can convert and save as a JPEG and keep the original RAW. Recently I shot a rugby match and found all the images were blue because I'd used a Tungsten white balance setting. This is easily fixed in RAW, but had they been JPEG, to my limited knowledge, my shots would have stayed blue.

Andrew Clark

We don't think we're *ordering* anyone to shoot RAW, just helping readers get the most from their cameras. See the RAW starter guide on this issue's disc.

UNCLE BUCKS

A letter in issue 100 (June 2010) mentioned people stealing images. As a favour, I shot my cousin's wedding, and then I put all the images onto a DVD. An uncle somehow got hold of the disc and later sought out guests who'd been at the wedding to take orders for reprints. He'd notched up an impressive 75 (prepaid) orders by the time I got the disc back!

I Rice

Like they say, you can choose your friends, but not your family...

CANON AND NIKON BIAS?

Why do you only concentrate on Canon and Nikon? I have an Olympus E520, which is an excellent camera, but you don't mention any other makes. Is it worth me subscribing to your magazine, I ask myself?

Amber

Are you reading the same magazine? In the last few issues alone we have reviewed the Sony NEX-5 (see page 116), the Panasonic G2 and the Samsung NX10, and tested the Olympus PEN twice. Then there are our camera group tests...

Reader surveys show that many of our readers use Canon or Nikon, so we often use their SLRs for example screens in our articles, but these examples will always apply to other D-SLR makes too.



Biased, us? We feature cameras from all manufacturers, not just Canon or Nikon models

"I'm a proud owner of a Canon EOS 50D. It's not the latest technology that makes a photo, it's the photographer"

WHAT'S WORKED FOR YOU? OR NOT!



Even though I recently had laser surgery to correct my vision, I still need reading glasses to see my camera's rear LCD. But I have a solution...

I recently bought a plastic magnifying sheet (the sort used for cross-stitching), cut it down to size and attached a neck strap to it. There you have it – a very cheap, very light and effective way to ensure I can review my shots accurately on screen!

Pat Archer

See page 72 for more ingenious ways to make budget accessories

FEEDBACK ON THE NEW-LOOK MAG

I'm loving the new *Digital Camera* – the layout is tidy and smart. The mag's packed with useful tips and info, as is the free disc.

Gareth Leer

Well done on the reboot of the magazine. The new look is very impressive, especially the new emphasis on hardware. However, my favourite item is the deconstruction of the cover image.

Andy Bird

As a long-term subscriber I was beginning to become a little jaded, but the magazine has refreshed itself into something I will definitely continue to subscribe to. Well done!

Steve Richardson

The disc has lots of Photoshop Elements tutorials and is easy to follow. Keep it up – great work!

Francesca



Our recent redesign seems to have gone down well, but what do *you* think?

PhotoRadar.com SNAP SHOTS

Views from the forum

EXPOSURE COMPENSATION

I use exposure compensation. But how does it actually work? If you consider that you are not actually changing the aperture value, shutter speed or ISO, how does exposure compensation enable you to lighten/darken your images?

Darren Francis

You'd certainly change the shutter speed (in Av) or the aperture (in Tv). Full Program modes may adjust both – and, with Auto ISO set, may adjust the ISO for you.

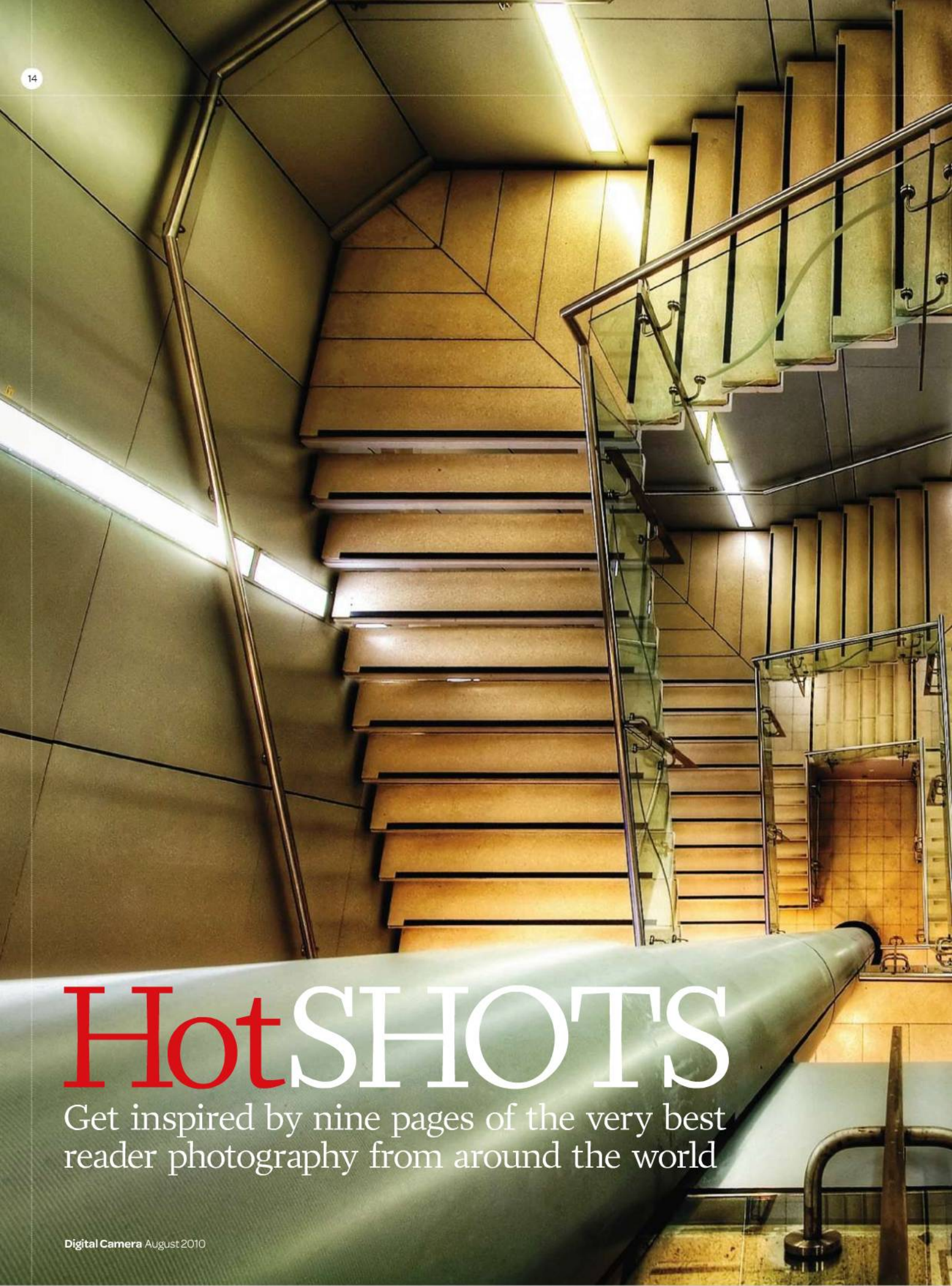
Try it. Select Aperture Priority, an aperture of f/5.6 and use a fixed ISO. With no exposure compensation set, read the values – usually in the viewfinder or on the top LED – and note the shutter speed. Dial in two stops of compensation and look again at the shutter speed. See?

Geoff Wessex

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HotSHOTS

Get inspired by nine pages of the very best reader photography from around the world





Previous page

Descent

Rob Cherry
Bournemouth, UK

1 "My favourite staircase, located here in Bournemouth, shot from above. It's quite futuristic, so I decided to give the image some tone-mapping treatment. I took three exposures, used Photomatix Pro to blend them and then finished off the photo in Photoshop CS4."

Nikon D90 with Sigma 10–20mm f/4–5.6 EX DC lens at 10mm; ISO200; three exposures (-1.7, 0 and 1.7 EV) at f/10



Steel

Laura Ferreira
Trinidad and Tobago

2 "I was trying to create something dark but with a pop of colour. I set up a backdrop and pointed one strobe at the model. Later, I increased the saturation in Photoshop and added more confetti."

Canon EOS 400D with Canon EF 50mm f/1.8 lens; ISO200; 1/200 sec at f/22



Sand Dune Walker

Bev Hadland
Chelmsford, UK

3 "These are the Maspalomas dunes, Gran Canaria. I didn't know when the figure would disappear over the ridge, so I quickly exposed for the dunes. The bland sky threw the figure into silhouette."

Canon EOS 10D with Canon EF 28–135mm f/3.5–5.6 IS USM lens at 65mm; ISO100; 1/15 sec at f/16



Digital Camera LOVES...

"Despite the simplicity of its composition, Yaman's shot draws you right in. I love the eye contact and the way the subjects are framed"

Sophie Spicer, operations editor



Father and Son

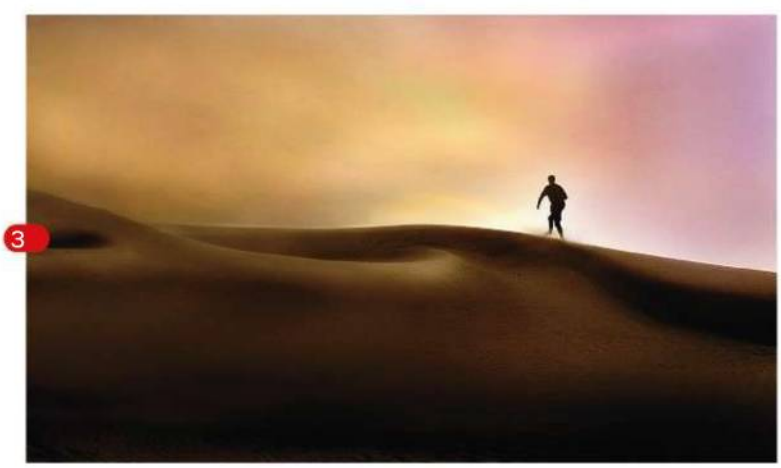
Yaman Ibrahim
Kuala Lumpur, Malaysia

4 "This was taken in Semporna, Sabah. It's a portrait of two Sea Bajau tribe members, who live in a floating house. I was shooting from a shaking boat, so used a high ISO to avoid a blurry image."

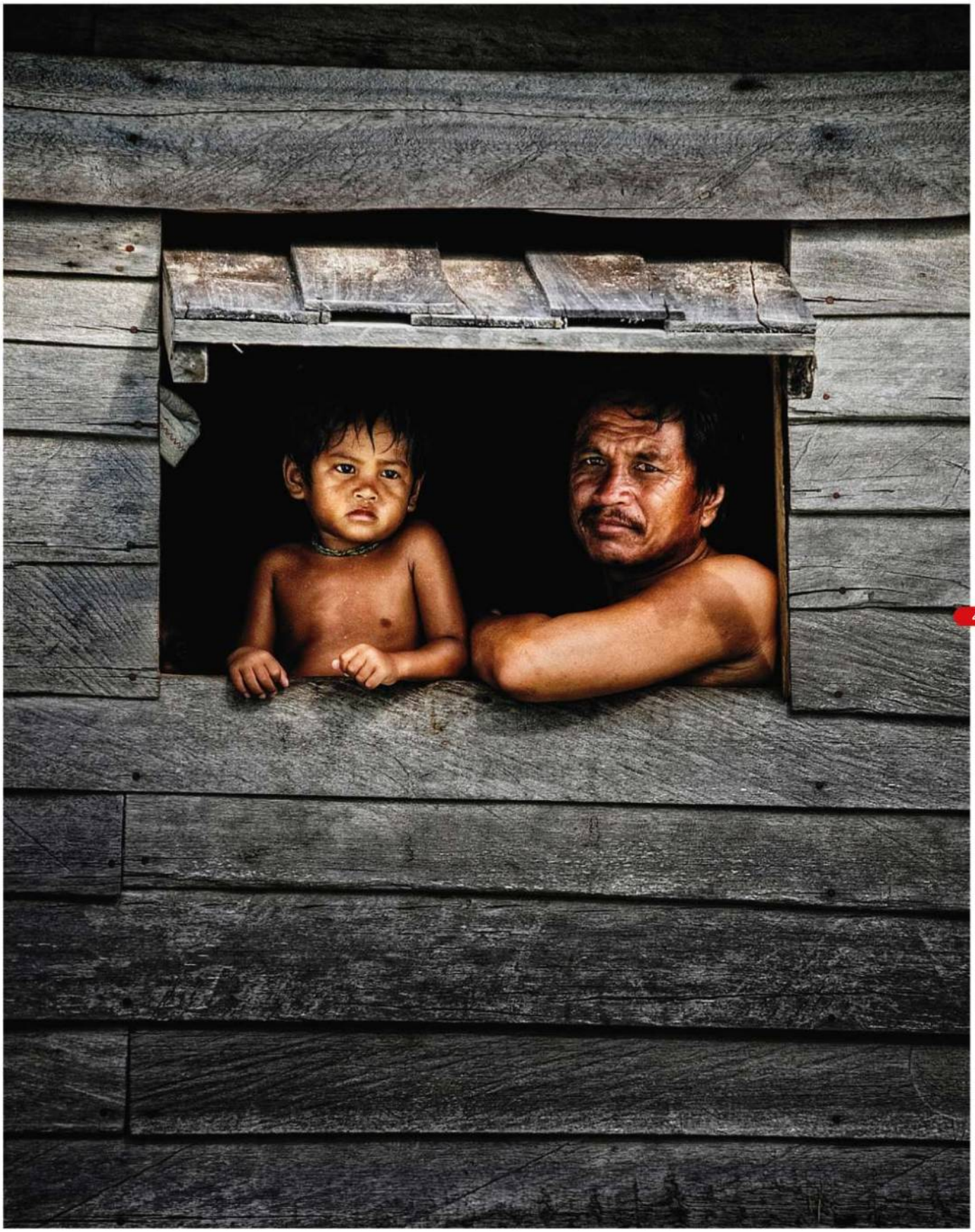
Nikon D3 with Sigma 50–500mm f/4–6.3 EX DG HSM lens at 270mm; ISO500; 1/500 sec at f/6



2



3



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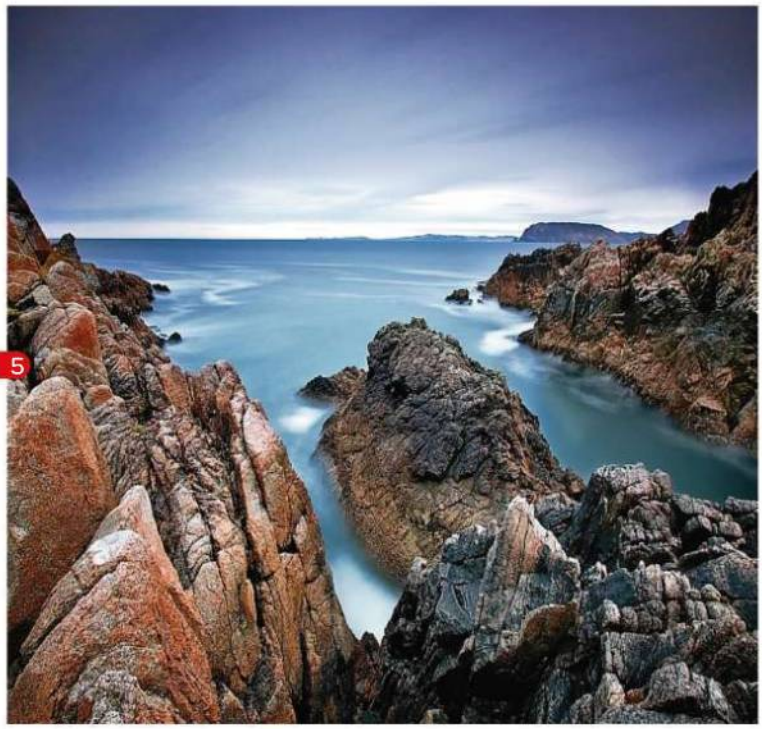


Never Mind the Weather

Pawel Klarecki
Limavady, Northern Ireland

5 "It was a cold, windy day, but that didn't stop me heading out to find this fantastic place. The rocks, sky and weather all came together to present this dramatic scene. I used a tripod and very dark Neutral Density filters, shot in Manual mode and then balanced the Levels and sharpened in Photoshop CS4."

Canon EOS 50D with Canon EF-S 10-22mm f/3.5-4.5 USM lens at 10mm; ISO100; 70 secs at f/8



5



Digital Camera LOVES...

"A knockout combination of quirkiness and technical élan, Andrew's puffin shot evokes the best work of Steve Bloom and other top pros"

Geoff Harris, editor

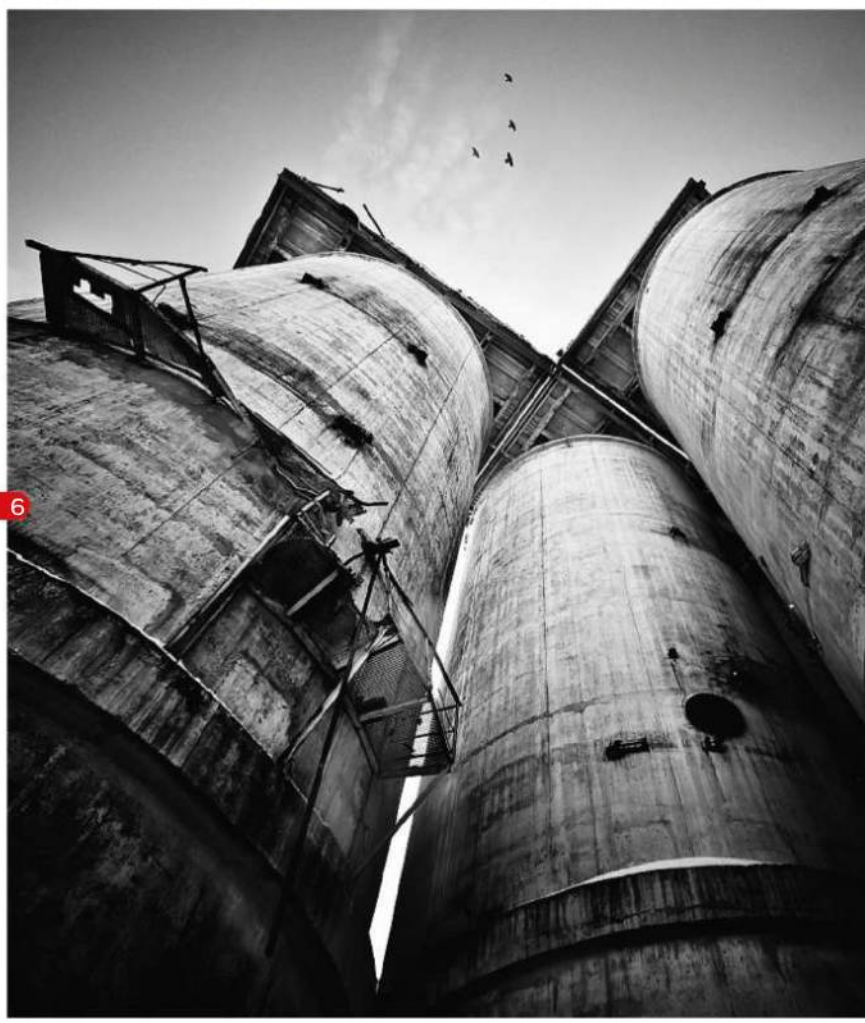


Silos

Piotr Jeczen
Lublin, Poland

6 "I took this photograph during the winter in my home town of Lublin. It features silos located in the ruined Ursus foundry. It was a beautiful day and the conditions were good for shooting – the setting sun gave an amazing light. I was particularly pleased with the way the birds flew overhead."

Nikon D300 with Sigma 10-20mm f/4-5.6 EX DC HSM lens at 10mm; ISO500; 1/800 sec at f/7.1



6

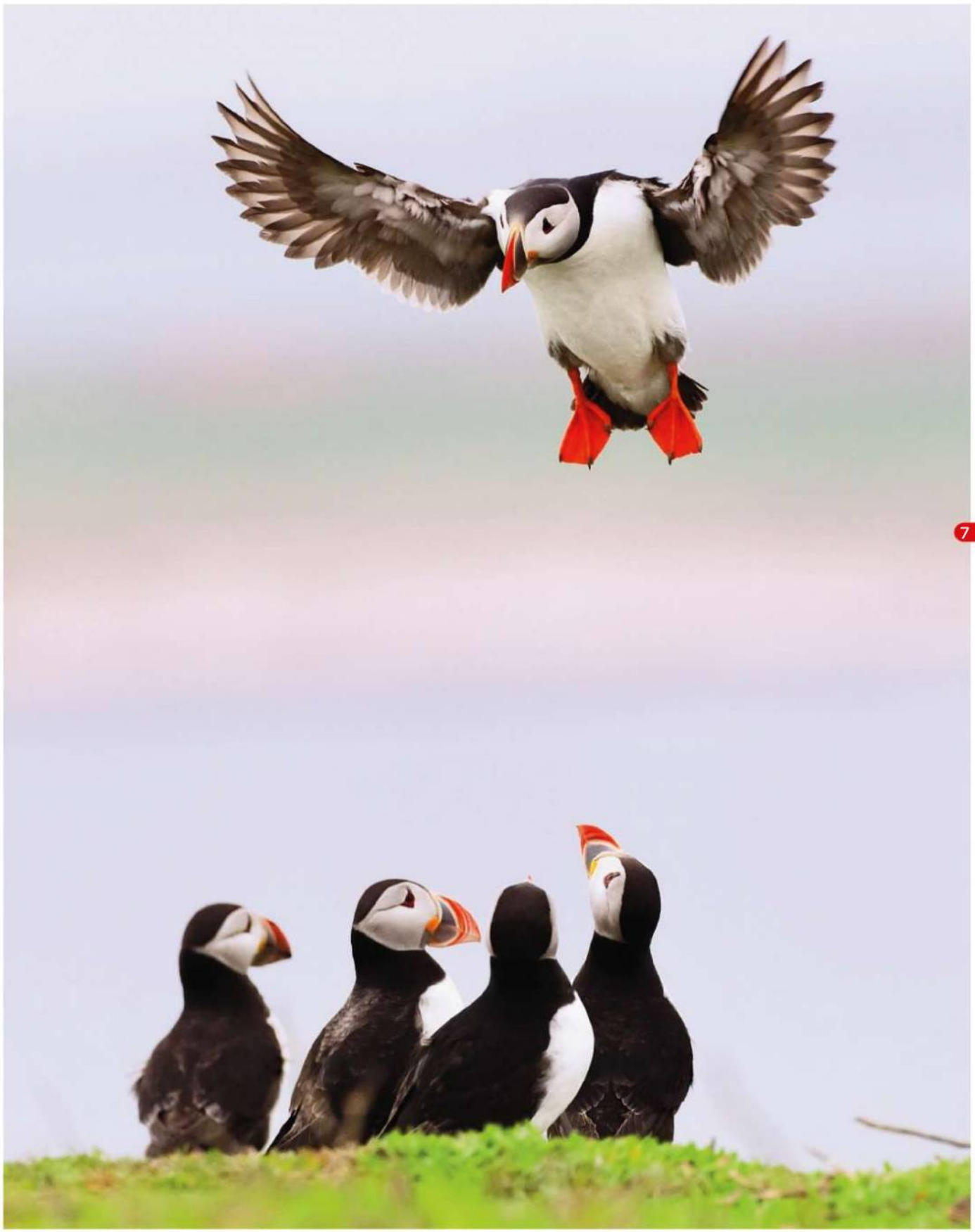


Incoming

Andrew Sproule
Kent, UK

7 "The weather on the Farne Islands is fairly unpredictable. On this day, it was overcast and the puffins were coming in fast over a ridge, constantly going from dark to light. This shot was a bit of a challenge, but the puffins on the ground looking up really make it."

Canon EOS-1D Mark IV with Canon EF 500mm f/4L IS USM lens; ISO400; 1/2000 sec at f/6.3



7



"The flower was positioned in dappled shade against a bright, sunny backdrop. I deliberately over-exposed to capture the flower's beautiful structure"





9



Love in a Mist

Mandy Disher
Huntingdon, UK

8

8 "This was taken in my garden, where the flower was positioned in dappled shade against a bright, sunny backdrop. I deliberately over-exposed to capture the beautiful structure. To enhance the colour and detail, I used Photoshop CS4 to adjust the Levels, increase the saturation and sharpen the whole shot."

Canon EOS 450D with Tamron SP AF 90mm f/2.8 Di Macro lens; ISO100; 1/125 sec at f/5



Digital Camera LOVES...

"Mandy's striking macro shot is beautifully composed and the soft petals contrast nicely with the leading lines of the green spikes"

Paul Grogan, technique editor

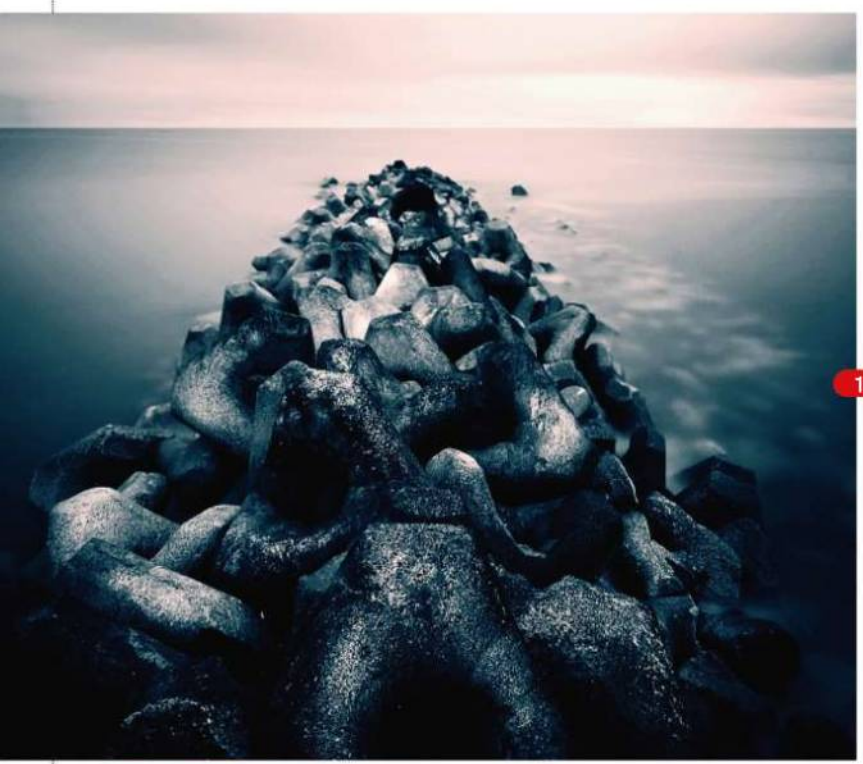


Immersed in Thought

Robert Garrigus
Yorkshire, UK

9 "I took this long-exposure shot just after sunset on the shore of Lake Michigan. I had to make a second, faster exposure to freeze the movement of the walker, and then composited the small section with the person into the background shot in post-processing."

Canon EOS 5D with Canon EF 70-200mm f/2.8L IS II USM lens; two exposures (25 secs at f/22, ISO50 and 1/4 sec at f/2.8, ISO400)



10



Awaiting the Swell

Stephen Judge
Surrey, UK

10 "The view from Shoreham's harbour wall, shot using a ten-stop ND filter. The result is a dream-like state in which the sea seems still. Later, I tweaked the shot in Photoshop, adjusting the Colour Balance for a cross-processed look and blurring and sharpening selectively to enhance the depth of field."

Nikon D90 with Tamron SP AF 10-24mm f/3.5-4.5 lens at 10mm; ISO100; 101 secs at f/3.5



Digital Camera LOVES...

"I'm drawn by Stephen's minimalist composition. I particularly like the almost humanoid shapes made by the rocks"

Ben Brain, deputy editor



11



Tara

Nina Sundberg
Oslo, Norway

11 "This portrait was taken in my living room, with only natural light falling in from the right. The large aperture enabled me to separate my subject from the clutter of the room and focus more on the eyes. Post-shoot, I made the face smaller, along with the mouth and nose, to create a doll-like facade."

Canon EOS 5D Mark II with Canon EF 50mm f/1.8 II lens; ISO100; 1/100 sec at f/1.8

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By Don Bailey

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By taking part in a competition, you agree to be bound by the competition rules, which are summarised below but can be viewed in full at futuretcs.com. Late or incomplete entries will be disqualified. Proof of posting (if relevant) shall not be deemed proof of delivery. Entries must be submitted by an individual (not via any agency or similar) and, unless otherwise stated, are limited to one per household. The company reserves the right in its sole discretion to substitute any prize with cash or a prize of comparable value. Unless otherwise stated, the competition is open to all GB residents of 18 years and over, except employees of Future Publishing and any party involved in the competition or their households. By entering a competition you give permission to use your name, likeness and personal information in connection with the competition and for promotional purposes. All entries will become the property of the company upon receipt and will not be returned. You warrant that the competition entry is entirely your own work and not copied or adapted from any other source. If you are a winner, you may have to provide additional information. Details of winners will be available on request within three months of the closing date. If you are a winner, receipt by you of any prize is conditional upon you complying with (amongst other things) the competition rules. You acknowledge and agree that neither the company nor any associated third parties shall have any liability to you in connection with your use and/or possession of your prize.

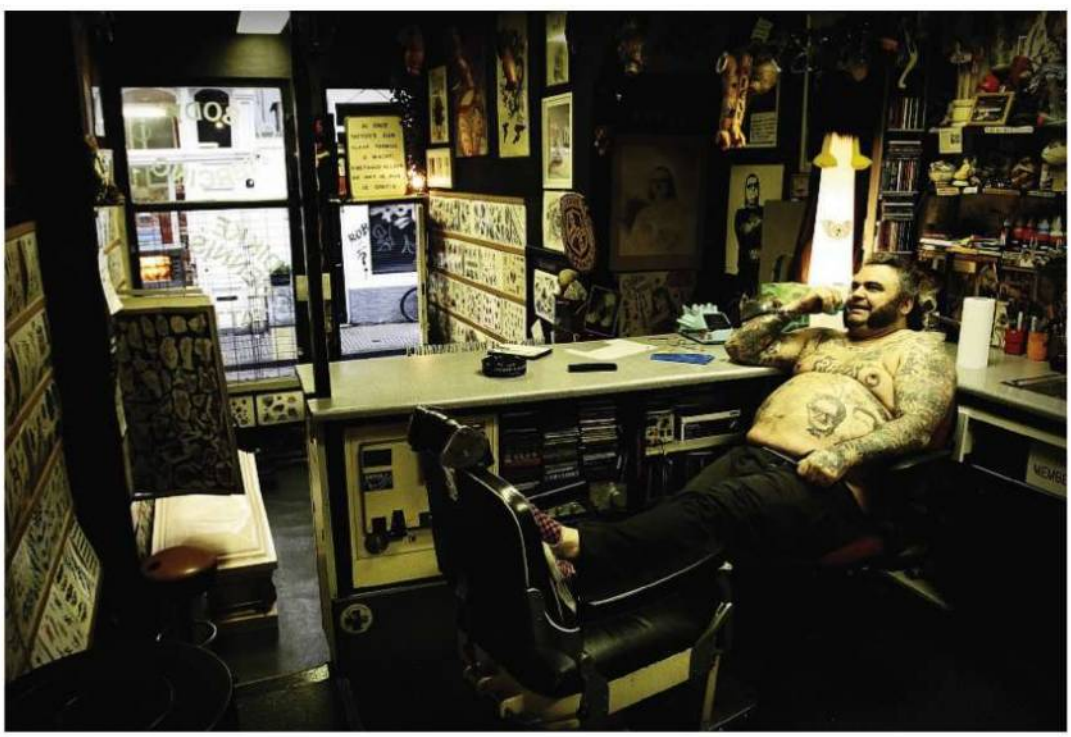
Digital Camera Photographer of the Year 2010

The 2010 *Digital Camera* Photographer of the Year competition is underway. Here's a quick guide to the newly introduced Documentary category...

Last year's *Digital Camera* Photographer of the Year Competition (POTY) was a huge success. It attracted an astounding 100,000 entries from every corner of the globe, with the overall winner, Iceland's Bragi J. Ingibergsson, pocketing a £10,000 cash prize. This year's competition will be even better, and to make this happen we've introduced a new and exciting Documentary category.

We want to see photography that tells us about the world you live in, whether it's your immediate environment or issues of a more global nature. Whatever you document, your shots should reveal its story in a truthful way. The judges will be looking for originality, technical competence and artfulness...

Get more details or enter now at www.poty2010.com until 13 August.



TIPS FROM THE JUDGES



Martin Keene is group picture editor for PA Photos (Press Association). He's one of the judges in this year's POTY competition...

"Try to find something you believe to be interesting, or that matters to you. Engage with the topic and people, and show that fascination in your photographs. You don't need to travel far – try looking at a familiar place, group of people or activity in a different light. Show the judges something or somewhere in a new way.

Use the minimum of kit so you don't look like a camera shop on legs. That way you won't miss pictures while changing lenses or adjusting settings. Start slowly – you will learn more and gain the trust of the people around you. You need patience.

You might want to highlight an issue that's in the news, or you may choose to tell a story that's 'news' to you – and hopefully to the judges. It's possible to make a great picture from the banal or the routine, but if your picture is banal or routine it won't get a second glance from the judges."

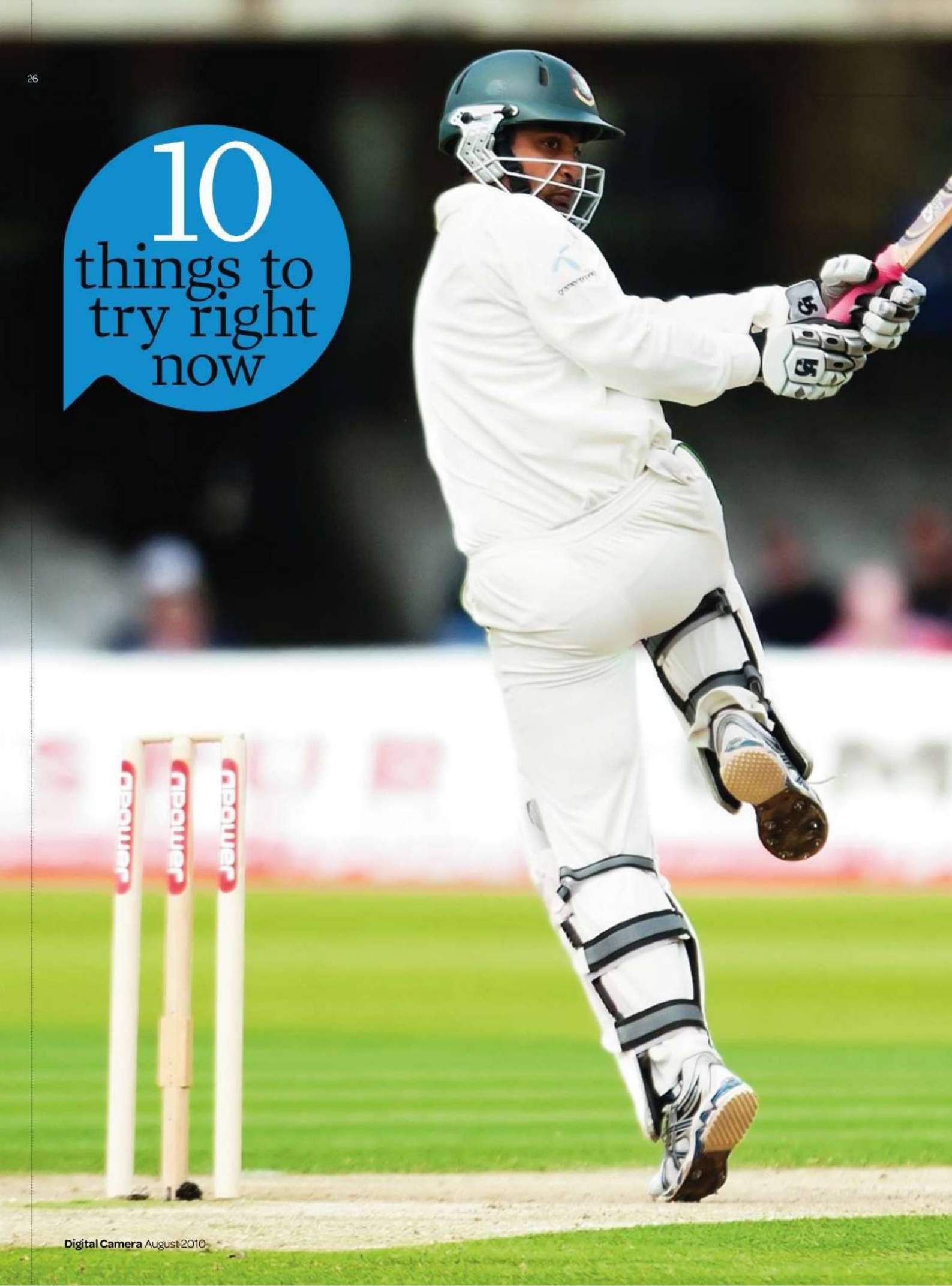
Dikke Dennis

By Thomas van Beek

In this image, a category winner in last year's POTY competition, Thomas used the language of photography to craft a powerful documentary shot. It is more than just a likeness of the subject and reveals aspects of his character and lifestyle

Partners
Telegraph.co.uk
VisitBritain
PhotoPlus
The Royal Photographic Society
moo.com
PhotoRadar.com
WHITEWALL

10 things to try right now



SPORTS

01 Bowl people over

Make sure your cricket shots knock everyone for six!

What could be more evocative of the British summertime than the sound of leather on willow? Whether you're at Lords or just down at the local rec, cricket photography is a great way of honing your sports photography skills.

"With cricket, you're a lot further from the action than you are with most other sports, so you need at least a 500mm lens, ideally 600mm," advises Getty sports pro James Cannon. "Long lenses are heavy, though, so you will also need a monopod to support them and to enable you to react to the action on the pitch as it unfolds."

You could have problems taking a monopod into a major test match, so if you're serious about cricket photography, begin by photographing amateur teams near your home and start to build up a portfolio.

Get started today...

* Try Continuous shooting mode for high-speed wicket action, but don't get carried away or you'll soon fill up all your memory cards.
* Follow the game carefully so you can sense what's about to happen.
* Try to visualise the shot you want to take, and then position yourself and your camera accordingly.
* Don't forget composition – focus on the action and ensure that the rest of the frame (including the background) doesn't distract.

James Cannon



Propeller blur is the key to photographing planes successfully and avoiding a static, boring look

Nigel Blake





Above and left When shooting jets, you can use a faster shutter speed than you would for propeller planes. Pan as you shoot to keep the aircraft in focus as they move, just as you would when shooting motorsports

AVIATION

02 Hit new photography heights

Make the most of air shows this summer

Air shows are a great way to get up close and personal with impressive aircraft hardware. And, of course, you can get some great shots when the planes take off.

"With air show photography, a long lens is essential, as is an appropriate shutter speed," says pro aviation photographer Nigel Blake. "A shutter speed of about 1/1000 sec or faster is fine for jets, but propeller blur requires a shutter speed of 1/200 sec or slower."

The challenge at 1/200 sec is panning at the right speed to ensure that the propellers blur while the rest of the aircraft remains sharp – otherwise the planes will look like static models.

Get started today...

* Take along a wide-angle lens when shooting planes on the ground or in hangers.
* Zoom in close on interesting details, such as decals and cockpit instruments.
* If shooting in gloomy hangers, fill-flash is a big help, or try increasing the ISO.
* Remember to pan when shooting moving aircraft – swivel smoothly from your hips.

EVENT

03 Get the kids into photography

Inspire the next Penn, Lanting or Adams...

Long summer holidays and bored kids equal frayed tempers, so why not use the long August break to get them interested in photography? If you can get to London on the afternoon of 2 August, there's a free family photography workshop running at The Photographers' Gallery (www.photonet.org.uk).

There will be activities for 8 to 11-year-olds that will get them started with basic techniques and composition, and the event will be led by the teams behind *Digital Camera* magazine, our sister title *PhotoPlus*, PhotoRadar.com and the Young Photographer of the Year competition. See you and the kids there!

Get started today...

* Rather than selling your old compact camera, why not give it to the kids so they can experiment with it.
* Printing a shot is more meaningful to a child than looking at it on screen.
* Encourage older kids and teens to take gig shots as a way of fostering an interest in photography.
* Explain the basics of aperture and shutter speed, but don't overwhelm them with complicated technique.



Henrik Sorensen (Getty Images)

AERIAL PHOTOGRAPHY

04 Head up, up and away!

Shoot at balloons. In a good way...

We're lucky to be based so close to Bristol, because the amazing annual Balloon Fiesta takes place from 12-15 August. However, other cities have festivals too and no matter where you live, balloons are bound to be a common sight in the summer sky. So why not have a go at photographing some, or taking pictures from one?

"Timing is critical to help you capture the perfect 'glow', so get in place early," says Mark Simmons (marksimmonsphotography.com). "Don't forget that, when taking photographs from a balloon, the reflection of the balloon 'envelope' and basket in water is beautiful. The same applies to silhouettes of balloons on a landscape – they look great."

Get started today...

* Lenses are crucial – take a wide-angle lens for ground and take-off shots, and a zoom (say 80-400mm) for close-ups and tight crops.

"Timing is crucial to help you capture the perfect 'glow', so get in place early"

* Scout the take-off areas for a good spot to shoot a mass ascension – a hill or elevation is perfect, as long as it's not too far away.
* Going up in a balloon? Try bracing yourself against the basket to reduce camera shake, or choose higher shutter speeds.
* You can shoot in either Aperture or Shutter Priority mode, but the latter enables you to increase or reduce speeds on the fly.
* Don't risk spoiling a subtle balloon glow with harsh, contrasty flash; increase your ISO setting instead to preserve the atmosphere and boost shutter speed.

Bristol Balloon Fiesta

SPECIAL OFFER!
Get the perfect picture and get up to 50% off a Virgin balloon flight! Visit www.virginballoonflights.co.uk or call 01952 212750 and quote *'Digital Camera'* before 24 August 2010. Terms and conditions apply.



A mass ascension at a balloon festival is a perfect photographic opportunity. Arrive early and choose the best place to shoot from



Paul Wyeth

SAILING

05 Take ship-shape shots with your D-SLR

Unsinkable tips for brilliant boat images

Whether you want to shoot Cowes Week (31 July-7 August) or just mess around with boats, it's a great time to hone your sailing photography skills. Shooting boats from terra firma requires similar skills to landscape photography, but getting on the water to shoot bigger craft is a different game.

"When you're shooting sailing, it helps to be mobile – if you're static, you'll tend to get static shots," says nautical photographer Paul Wyeth. "I shoot from a small inflatable, so I can adjust my position. In terms of composition, I look for images with plenty of action, plus an element of human interaction."

Get started today...

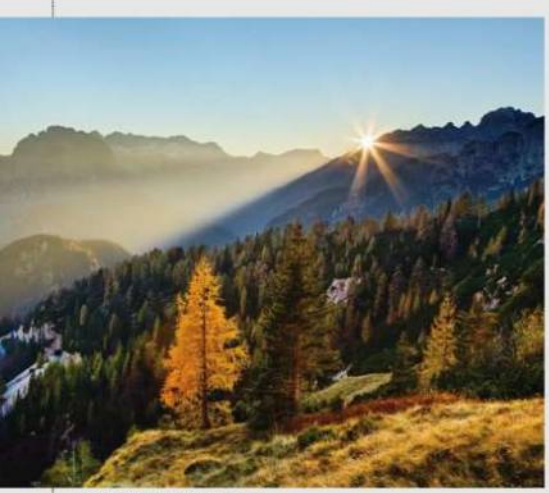
* Increase shutter speed (or ISO) to cope with faster moving boats or frenetic crews.
* Take a range of lenses; telephotos to shoot boats in the distance, and a wide-angle to capture the boats at the beginning of a regatta.
* Salt-water spray isn't good for your lenses and SLR bodies, so make sure they're weatherproofed (or carefully protect them).







Above and top Most professional nautical photographers have a basic understanding of sailing because it helps them predict where the boats will go, and enables them to position themselves accordingly



Guy Edwardes (Getty Images)

TRAVEL

06 Try a new destination

Recharge your travel-photography batteries

Tired of getting exactly the same travel photos as everyone else? Inspiration can be closer (and cheaper) than you think. Landscape and wildlife professional Guy Edwardes swears by Slovenia. "There's a great variety of landscapes there, and the Julian Alps are a real highlight," he says.

Better-known locations are also rebranding themselves as photo-holiday destinations. Menorca, for example, offers stunning seascapes and green rolling landscapes, and it's two hours from Luton by budget airline.

Get started today...

* Get travel ideas online – see www.photoradar.com and www.travellerspoint.com.
* Check out the work of travel and landscape pros to see what kind of places they've visited.
* You can get great shots, even on a bucket-and-spade family holiday. Ask the locals about photo opportunities and hidden beauty spots.
* If you plan to shoot in a very different culture – Iran or China, for example – check out the local rules about photography. Guidebooks, websites or a call to the embassy are all useful.

DON'T MISS... Our interview with a travel pro on p104

2010 AWARDS TIPA BEST D-SLR ENTRY LEVEL

story-shooting by Emily



Emily rocks at the summer rock festival

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UNDERWATER PHOTOGRAPHY

07 Try diving for shots

Take the plunge for stunning results

Think boats are too staid? Go deeper. Most readers who've paddled in the azure waters of the Maldives, Mauritius or Menorca will have thought about underwater photography, but how do you get started?

"Get proper training in snorkelling and diving techniques before attempting to shoot underwater," says Linda Pitkin of the British Society of Underwater Photographers.

You can spend anything from a few hundred quid to several grand on underwater camera housings, so why not join an underwater photography group and try out their kit first?

"Underwater photography takes patience, but you must stay alert to catch the moment the fish moves," adds Pitkin. "Shoot when it's in one plane of focus and clear of obstructions."

Get started today...

* Try 'neutral buoyancy', a diving technique where you move close to sea creatures without bumping into them.
* Get up close and don't forget still fish on the ocean floor – you have more time to compose.
* Point upwards to maximise the light, but watch that the light doesn't cause blow out.
* Or shoot down. "Looking down can work in situations where there's enough contrast, as with subjects near the surface," adds Pitkin.

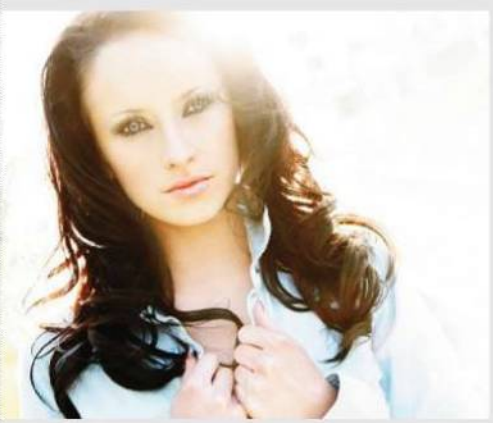




David Doubilet

Above Trained divers can use a technique called neutral buoyancy to ensure that they don't sink or float while shooting aquatic creatures in their habitats

Left You'll need to set your white balance manually, because you'll lose reds the deeper you go. Set faster shutter speeds (or a higher ISO) too, because you'll be shooting handheld



Brett Harkness

PORTRAITS

08 Try high-key photography

Give your summer portraits a creative twist

Visit a big photography website such as PhotoRadar.com and you'll see that high-key portraits are all the rage. But how do you get this striking, 'blown out' look?

"The key to high-key portraits is to expose for the shadow areas of the face," says top social photographer Brett Harkness. "This will give you a slower shutter speed than is needed for the surrounding area, blowing out the rest of the shot and giving it a bright summery feel."

Get started today...

* Position your model to maximise the light.
* Manually set the AF points over your subject's eyes – or wherever else you want to focus.
* Experiment with lens flare – you often get this when shooting into the sun.

PhotoRadar.com



SCENICS

09 Get great cloud effects

Essential filter tips for sweet sky shots

Want to get interesting cloud shots, even in the middle of a bright day? Try using a six- or ten-stop Neutral Density filter, which enables you to use a much slower shutter speed. Ideally, the clouds need to be moving towards or away from you, as this draws the viewer into the scene. They also need to be moving quite quickly – even when clouds are scudding past, you'll need a shutter speed of at least 20 seconds, and possibly much longer.

Get started today...

* Ten-stop NDs are hard to see through, so compose and focus your shot before attaching them.
* Expose for your scene as normal and then over-expose by ten full stops. Fine-tune your exposure settings with your D-SLR's histogram.
* Note that ten-stop NDs add a warmer colour cast, so take advantage of this for summery shots.
* Ten-stop NDs can also be used to blur the motion of moving water.

Guy Edwardes (Getty Images)

Your Mission

10 Take our latest photo challenge

Off on holiday soon? Send us your best travel shots. You could see them in print *and* win a Lowepro rucksack worth £120

There's tons on travel photography this issue, and your summer holidays are the ideal opportunity to put our tips into practice. Whether you're planning months in Mongolia or just motoring down to Margate, inspiration can be found everywhere.

To get your shots into the mag (and walk away with a lovely Lowepro Flipside 400 AW rucksack), you'll need to convince us that you've really delivered something different. By 'different', we're not on about a totally original location (location alone does not a great photo make), but an image with passion, character, emotion... that indefinable 'something' that makes it stand out from everyone else's shots.

So, it could be a fresh and striking take on a well-known tourist spot, a soulful portrait or a dramatic crowd scene. The possibilities are as wide as the planet, so get shooting now!

Get started today...

* Read this issue's free supplement, then slip it inside your camera case for future reference.
* Don't take too much gear, but a couple of lenses and a portable tripod are essential. You'll need capacious memory cards, too.
* Check guidebooks, websites and postcards so you identify the hottest photo spots.
* Check that your travel insurance covers your kit, and *never* put a camera in check-in luggage!

WIN a Lowepro Flipside 400 AW



Each month we're giving away this high-capacity Lowepro camera backpack worth £120 to the lucky winner of our Your Mission challenge.

* The Lowepro Flipside 400 AW backpack has been designed for a full day's shooting – come rain or shine.
* This high-performance camera backpack offers expanded capacity, with room for a professional D-SLR with a zoom lens attached, plus four to six additional lenses.
* The Flipside 400 AW features a unique back-entry compartment that provides easy access to gear when setting up – keeping the harness off the ground and clean – plus extra security when on the move.

Lowepro www.lowepro.com

HOW TO ENTER Create a gallery on www.photoradar.com, upload your entry and email the link to digitalcamera@futurenet.com with 'Your Mission: Travel' in the subject line by 23 August 2010. The three best shots will be printed in issue 104, on sale 21 September 2010. A selection of the best shots will appear on our website.



Get travel inspiration

Still not sure what to shoot for this month's mission? Spend some time checking out the work of top travel photographers, most of whom have websites (we talk to Philip Lee Harvey on page 104, for example). Our website, PhotoRadar.com, is also full of inspiring travel images, photographic tips and lively debate. Here are some different types of travel shots to consider...

See issue 100's best entries overleaf!

Travel shots too postcardy? Try these fresh approaches...



1 Shooting a well-known building? Making the most of the ambient light and shooting from interesting new angles will help avoid your shots looking like tired old postcards.



2 Understand the food and you understand the country, as the saying goes, so shoot street markets, sidewalk cafés and shops. Make sure you respect privacy and customs.



3 Exotic portraits are great, but context and possessions (like this spear) create a sense of place. This shot wouldn't have worked as well against a duller background.



4 Not all people shots are about eye contact. Here, Julian Love's image speaks eloquently of the colourful but tough working conditions endured by the subject.

Julian Love

Your Mission WINNERS

Issue 100's Mission was 'Water'. Here are the top three shots...





1st
The Flume Rider

BY CHRIS MOLE

"This was taken near Le Bourg d'Oisans – underneath a flume at a swimming pool. I was attracted to the anonymous and curious silhouettes created as people went past. I liked this shot as the shape has purpose, with the hands stretching forward, but looks headless.

I used a wide-angle lens to accentuate the impact of the figure and compensate for the lack of space. Many silhouette shots work equally well – or better – in black and white, but this one doesn't. I think the blue is essential to the effect."

Canon EOS 20D with Canon EF-S 10-22mm f/3.5-4.5 lens; ISO400; 1/500 sec at f/5







2nd
Drops, Oil and Colour

BY MIKE VAN HEEL

"I set the exposure time to 1 sec at f/14 and used a flash to freeze the drops. The challenge was to get one drop to crash onto the next. I put oil in the water, coloured paper on the back of the bowl and let the flash bounce from it. It took a lot of time and patience to get the result I wanted, but I was very pleased with this shot."

Canon EOS 5D with Sigma 150mm f/2.8 EX DG HSM Macro lens; ISO250; 1 sec at f/14



3rd
San Francisco Blues

BY JEFFREY WATSON

"I took this photograph during a recent trip to San Francisco. These jellyfish were on display in an aquarium and they were being lit softly from beneath and above, creating this amazing effect. I selected an aperture of f/3.5 and a shutter speed of 1/30 sec to capture them as crisply as possible in the low light."

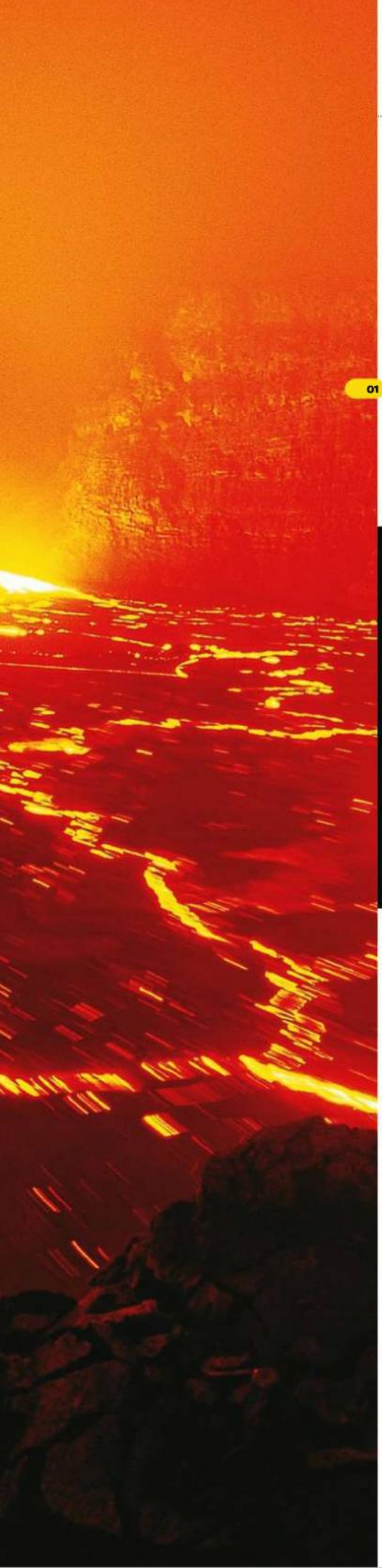
Sony a350 with Sony DT 18-250mm f/3.5-6.3 lens; ISO400; 1/30 sec at f/3.5

Fancy your chances at this issue's Mission? Upload your shots today on our website – PhotoRadar.com

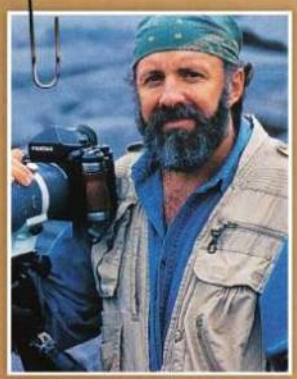

The S.S Perception
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William Foley, Canada
Digital Camera Photographer of the Year 2010
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Partners:
Telegraph.co.uk
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WHITEWALL



01 Pu'u O'o, Hawaii
I had been camping on the rim of the Pu'u O'o vent for about a week when the activity really picked up, and I knew something amazing was going to happen. The large spatter cone in the middle of the vent started to violently erupt, sending a huge volume of lava into the vent, filling it up overnight and spilling out of both sides in the morning. I got back to my tent right before it began to overflow



01



MISSION FACTFILE

What: To further the understanding and appreciation of the natural world – contributing photographs on a global scale that help us to comprehend the bigger picture.

Where: Big Island of Hawaii and beyond.

Who: Brad Lewis, an internationally acclaimed volcano photographer, otherwise known by the name Volcano Man.

Kit list: Nikon D3s camera with dual 32Gb CompactFlash cards. Nikkor lenses ranging from 16mm to 500mm, particularly the 17-35mm f/2.8 and 80-200mm f/2.8. Gitzo carbonfibre tripod with Acratech ball head.

More info at: www.volcanoman.com

Playing with fire

Meet the photographer so passionate about his job, photographing erupting volcanoes, that he's chosen to live on one...

Shooting volcanoes is, er, niche. When did your fascination begin?
As with most people, I've been fascinated with volcanoes since I was a child. I moved to Alaska when I was 19 years old and found myself surrounded by massive volcanoes. They were awe-inspiring, but not approachable due to their remote locations and explosive nature. When I moved to Hawaii in 1982, all of that changed. In January 1983, a big eruption started on Kilauea volcano, and has been going on ever since.

You live on a volcano, right?
Yes, I live on the summit of Kilauea volcano, just a mile from the caldera. Before moving here, I lived on the volcano's lower flank, a more dangerous place to be due to the lava flows of the 1980s and 1990s that missed my house by just a few miles.

How dangerous is photographing volcanoes, and what precautions do you take?
The danger is all relative. I figure that if I pay attention and listen to my intuition, I'll stay out of harm's way. It always feels more dangerous driving or flying to where I start my adventure into the volcano than being on the volcano itself. I always carry a respirator and have protective clothing when I'm out on the hot lava. I wear boots with the soles sewn on, so that they don't melt off when I'm on the lava.

You must have found yourself in some, ahem, heated situations?
Once, I was at a new vent, and big lava lake, about the size of a football field, when it started to overflow on all edges. It happened so fast that I needed to get my gear and bolt out of there. That experience made me realise that I always have to pay total attention to the situation. There are many dangers on the volcano, from thin-roofed lava tubes and razor-sharp lava to huge benches of land that fall into the ocean. Constant care needs to be taken.

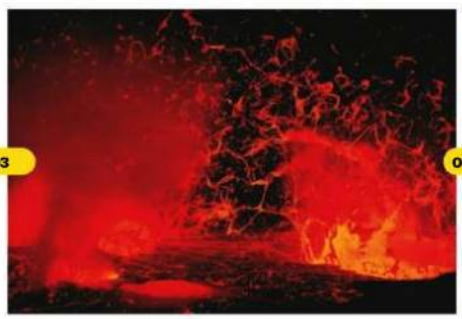
What pushes you to keep going?
The sheer beauty and power of it all. As a photographer, I can imagine no subject quite

02 MLK Vent, Hawaii
This is a lava river coming out of the MLK vent, which was less than 24 hours old at the time. I was working with Frans Lanting on a *National Geographic* article, and we'd been camping in a kipuka by the Pu'u O'o vent for a month when this new vent started. I was mesmerised by the movement and light

03 Lava exploding by the ocean
This phenomena occurs when a weakness in the lava tube system allows ocean water to enter the tube, causing explosions of lava

04 Pelé's Braids
Hot pahoehoe lava can be ropy and braided. This particular flow was still moving slowly, as it was cooling in the early morning light


02


03


04


05

05 Bubble Burst, Hawaii
This is another situation caused by ocean water entering a lava tube, creating explosions of hot lava. The bubbles of lava can be quite big before they explode

06 Transition
A large pahoehoe lava flow covers the black sand beach at Kamoamoa, a significant archaeology site within Hawaii Volcanoes National Park. This entire area was eventually covered by lava, destroying all evidence of past habitation


06

"There are many dangers on the volcano, from thin-roofed lava tubes to huge benches of land that fall into the ocean. Constant care needs to be taken"

as interesting as an erupting volcano. The movement and light is mesmerising.

With volcanoes always changing, it seems that even you will never have seen it all...
So true. It's always different. No two outings are the same. There's always something unique to photograph. I'm never bored.

Your photos are very artistic. Is it important to capture a feeling as well as simply record what's going on?
Definitely. I want my photos to strike an emotional chord in the viewer. I want it to get into their heart and soul, not just dance in their head for a while. The composition and light of the volcano is all about emotion.

Is there one elusive photograph that you're constantly chasing?
I'm always seeking extraordinary beauty and light. Nature provides unexpected treats all the time, but there isn't one photograph in particular that has been evading me.

How do you market your work and who are your clients?
I market my work through my website, agents, long-established clients, fine-art galleries and word of mouth. I want the viewer to be inspired by the beauty and power of my images. I want my photographs to take their breath away.

Do you travel a lot, photographing different volcanic areas, or do you stick to your own particular patch?
I do quite a bit of travelling, simply due to the fact that I live in Hawaii, Utah and Alaska. Being that I live in these three states, I get quite a bit of variety in what I'm photographing. I love erupting volcanoes, but I also enjoy shooting glaciers, waterfalls, forests and so on. It keeps it all balanced.

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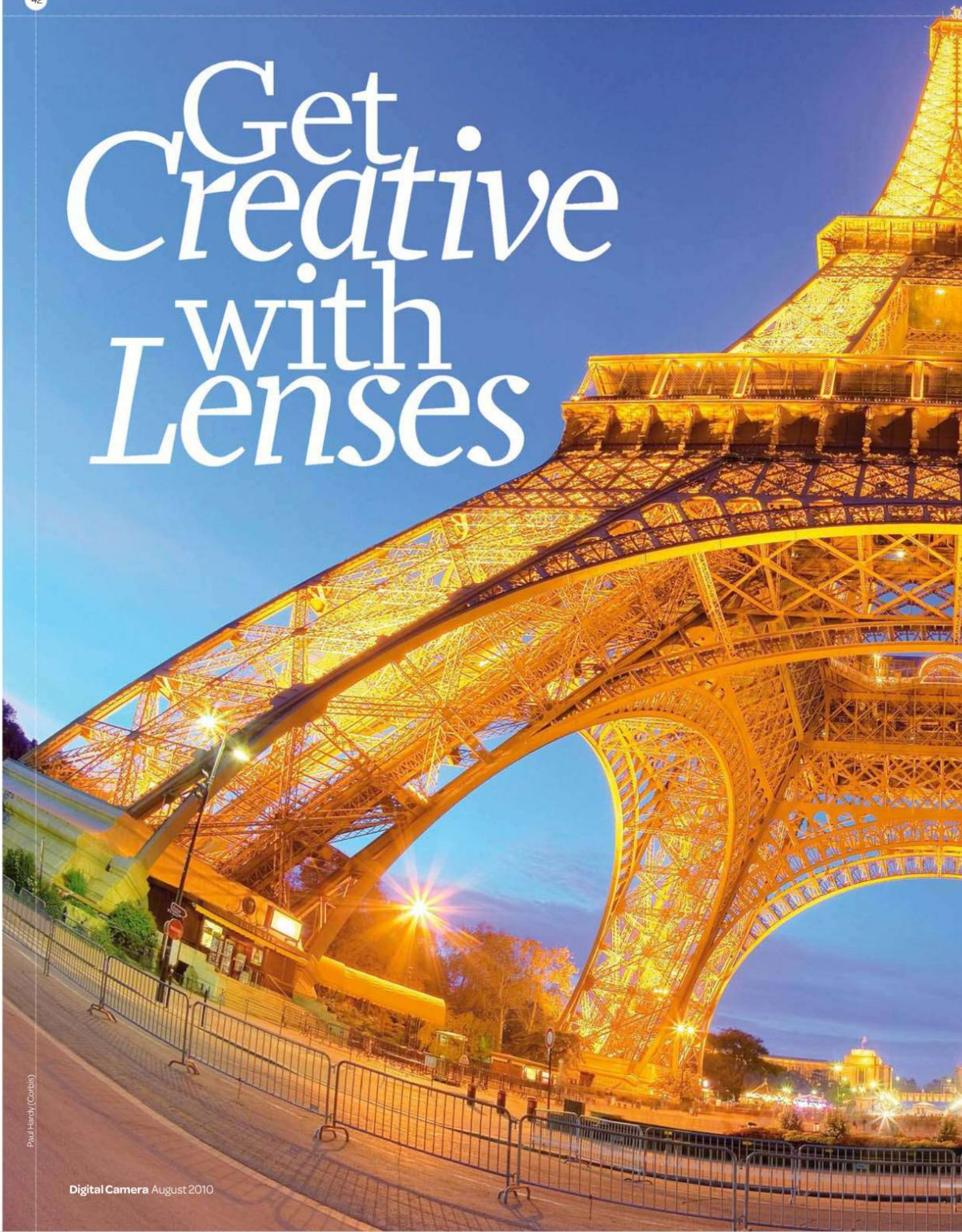
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Get Creative with Lenses



Paul Hardy (Corbis)

Looking to get the very best from your glass? **Chris Gatcum** asks four top pro photographers for their tips and advice on a range of lens types

"The lens is the most important part of your camera" is perhaps the most repeated piece of optical wisdom you're likely to hear, and we're unashamedly restating it here for one simple reason: it's true. Sure, your choice of digital SLR has a greater impact on your images than your choice of a 35mm camera body ever had, but your lens is still one of the most critical parts of the system.

It's not just about *buying* the best lenses, though. Anyone with a healthy enough bank balance can 'splash the cash' on a set of top-end optics, but if you want to fully exploit them, you need to know how to use them properly. And who better to guide us in doing precisely that than four top professionals, all highly experienced in their respective fields? They share their advice on the following pages...

Find out which **wide-angle lens** we recommend on page 128



Ultra-wide masterclass



Top landscape pro Tom Mackie explains how to get the most from a wide-angle lens

PHOTOGRAPHER BIO



After a five-year stint as an LA-based commercial photographer, Tom Mackie (www.tommackie.com) traded the confines of the studio for the great outdoors, and swapped the USA for the UK.

Now, in between running photography workshops, writing books and supplying images to a wide range of publications, he can be found travelling the world with his Canon EOS 5D, relying on his Canon EF 16-35mm f/2.8L II zoom to record stunning landscapes both at home and abroad.

Not using Canon? Try this...

Nikon: Nikkor AF-S 17-35mm f/2.8D ED IF

Sony: Zeiss 16-35mm f/2.8 ZA SSM Vario-Sonnar T*

Wide-angle lenses are nothing to do with widescreen format images – they're lenses with a short focal length (eg, 14mm) that enable you to squeeze more of a scene into your frame.

When should a landscape photographer use a wide-angle lens?
The most obvious reason for 'going wide' is when you're photographing an expansive view, but one of the easiest mistakes is trying to include too much in the frame. The tendency is to put on a wide-angle lens to capture a grand landscape, but this can easily dilute the image. What you leave out of the frame is as important as what you include, but a wide-angle lens naturally takes in a great deal of the subject, so you need to think carefully about what you're doing.

A wide-angle will also make the subject in the background appear much smaller than it would otherwise, so the classic workaround is to link distinct areas of foreground, midground and background. You can use a wide-angle lens to create a real sense of depth that emphasises this 'near-far' perspective, especially when you include something in the foreground, such as flowers or rocks.

Above
Sunset Over the Cuillin Hills, Isle of Skye. Taken by Tom Mackie with a Canon EOS 5D Mark II and Canon EF 16-35mm f/2.8L II USM lens

Are there any other compositional 'tricks' you can use to increase the impact of a wide-angle image?
Sure. As well as including foreground interest, a wide-angle lens is great for emphasising leading lines. For example, positioning the camera close to a fence or railing, you can have it enter the frame from the corner and

"Use a wide-angle to create a sense of depth that emphasises 'near-far' perspective"

How to get the best results





1 Shoot in Aperture Priority

I always shoot in Aperture Priority mode when I'm doing landscape work, simply because it means I can choose the most appropriate f-stop and depth of field for the given situation. As a rule I tend to use the optimal aperture for the lens I'm using, which tends to be between f/8 and f/14.

2 Use the hyperfocal point

Whenever I'm including foreground interest I'll focus on the hyperfocal point to maximise the depth of field. I could just focus at infinity and use the smallest aperture, but the hyperfocal point lets me use a slightly wider aperture and most lenses perform better when the aperture's opened up by a stop or two.

TOM'S KILLER TIP

"Set your camera on the ground for a bug's-eye view of a landscape. This creates an unusual and dramatic composition because it's not an angle that we're used to viewing the world from. A tripod that drops all the way to ground level is perfect for this sort of photography, but if you're using an ultra-wide-angle lens, you need to make sure the tripod legs don't appear in the bottom of the shot.

"Next, set your camera's self-timer or use a remote release to trigger the shutter and avoid blurring caused by camera shake. Be sure to stand well clear of the camera to avoid your shadow getting into the picture.

"If your camera has Live View and it isn't possible to use a tripod, a possible alternative is to hold the camera low to the ground and close to the subject."

lead in to the subject to guide the viewer through the frame. This works much better with a wide-angle lens than a telephoto because the perspective is far more dramatic.

What other advice would you give to those wanting to get the best out of a wide-angle lens?

Don't just focus at infinity and hope that everything in your photograph will be sharp. Wide-angle lenses may have a greater depth of field than telephotos, but you still need to use the correct aperture and focus at the correct point within the frame to get the most from the lens, which means using the hyperfocal point [see 'How to get the best results', above].

Are there any other challenges involved when shooting wide?

There are definitely certain considerations that are specific to wide-angle shooting, such as using filters. If you stack too many – and it doesn't take a lot with a wide-angle – you run the risk of vignetting, or seeing the filter in the corners of the frame. If you want to use a polarising filter, I'd always recommend buying an ultra-thin filter to avoid this.

Something else that often needs attention is the distortion at the edges of the frame. Depending on the lens and focal length, elements placed at the edge of the frame can become distorted; vertical lines will tend to converge inwards if the camera isn't parallel to them, and barrel distortion can be an issue, depending on the lens [see page 82 for advice on correcting distortion post-shoot].

Are there any useful accessories that can help you when you're shooting with a wide-angle lens?

Lens hoods are the obvious answer here, but personally, I don't use them with wide-angle lenses because they have minimal usefulness and are just another item to take up space in my bag. Everything in my bag has to have a purpose, and using your hand to shield the lens does the job just as well as a purpose-made hood – if not better.

So what should someone look for in a good wide-angle lens?

The two most obvious things to consider are minimal barrel distortion and the resolution of the lens. Make sure you read reviews of the lens you are interested in, and then test it yourself. I will often get three lenses of the same focal length and test them by mounting them on a tripod and photographing a line chart or even a brick wall – your local camera shop should be happy for you to do this if you're going to buy a lens from them.

Make exposures at every aperture and various focal lengths if it's a zoom, then view the results at 100% on a computer and check the centre and edges of the images for sharpness before making your final decision.



ESSENTIAL LENS GEAR: POLARISING FILTER

For landscape photography, a polarising filter has a number of effects and, depending on the angle of the sun to the filter, it can be used to intensify blue skies and/or reduce reflections on water or foliage. None of this can be recreated – at least not convincingly – using your image-editing program, making a polarising filter a real must-have accessory.



Ralph Lemarechal took this shot of a homeless girl on the streets of Beijing with a Canon EOS-1Ds Mark III and Canon EF 24mm f/1.4L USM lens

Prime lens perfection



Ralph Lemarechal explains the benefits of choosing a prime lens for portraits

PHOTOGRAPHER BIO



Working out of Amsterdam, Ralph Lemarechal (www.photoshoot.me) is a French photographer specialising in fashion and portraiture (he took last issue's stunning cover image).

His portfolio and commissions include everything from catwalk shows and studio-based hair and model shots, through to environmental portraits. Yet no matter where he's working, there's one lens that's always on hand for his Canon EOS-1Ds Mark III – a Canon EF 85mm f/1.2 'prime' lens.

Not using Canon? Try this...

Nikon: Nikkor AF 85mm f/1.4D
Sony: Zeiss ZA Planar T* 85mm f/1.4

Prime lenses have a fixed focal length. They usually have a wide maximum aperture, too, so they let in lots of light and enable faster shutter speeds. They're also ideal for blurring portrait backgrounds.

Why do you choose to use a prime lens over a zoom?
For portrait photography, a good fixed focal length lens can focus faster than a consumer zoom, and the typically wider maximum aperture enables you to shoot in low light without flash. Image quality can be better, too. You need to pick the right tool for the job.

So which prime lens do you use for your portrait shots?
It depends what I'm shooting and the look I'm after. For outdoor model portraits, I'd go with an 85mm f/1.2. It's a classic focal length for portraits and the narrow depth of field I can get lets me concentrate on the model's eyes, which gives an intense, direct contact with the subject.

My other regular choice is a 24mm f/1.4. Wide-angles aren't usually considered portrait lenses, but it's great when I want a reportage feel, especially when it's used wide open.

What are the advantages of using a fixed focal length instead of a zoom?
Prime lenses often have wider apertures than zooms, but this isn't just about getting a shallow depth of field – the quality is often better when you shoot wide open with a prime. I also like how a prime lens makes me behave as a photographer.

The picture on the left illustrates this perfectly. The only lens I had with me was my 24mm f/1.4, so I had to push myself to get the shots I wanted. That meant getting as close as possible to my subjects, and when you get really close, something magic can happen: visual communication. A smile will come, maybe a negative headshake, but the results will be far better with direct eye contact.

And the disadvantages?
The greatest disadvantage is the lack of flexibility when you can't move with your camera. The perfect example is when I'm shooting a catwalk fashion show. In a short space of time I need to get full and three-quarter length shots, as well as tighter portraits of each model, which I can't see myself doing with a prime.

JARGON BUSTER: PRIME POWER

Modern zooms offer a vast range of focal lengths in a single optic, but the humble prime lens hasn't had its day. Lens designers work with a single focal length, so chromatic aberration or distortion can be more easily resolved, whereas designing a zoom lens means compromise is often necessary. As a result, a prime lens often gives superior results to the equivalent focal length on a zoom.

RALPH'S KILLER TIP

"My number one rule for shooting portraits? Get close, and shoot quickly! Making sure your subject is aware of your intentions opens up an interaction and gets eye contact, so don't be afraid to approach your subject. I find that the best expression immediately follows a positive answer, so I'll push the shutter half a second after a 'yes'."

Essential techniques



1 Consider the light

For most outdoor portraits, I'll set my camera to Aperture Priority and (if the light's good), I'll set the aperture two stops down from wide open to get a shallow depth of field. If the available light isn't as good, I'll shoot one stop down from the widest aperture, or even wide open if I know the lens performs well.



2 Focus on the eyes

To make sure I'm always focusing on my subject's eyes, I'll select a focus point towards the top of the frame (left or right), then lock the focus and recompose before I take the shot. You need to be careful to focus on the eye itself, though, because it's very easy to have the eyebrows in focus, but the eyes slightly soft.



Telephotos demystified

Wildlife photographer Chris Weston relies on a Nikon telephoto lens when he's out in the field

PHOTOGRAPHER BIO



Photographer Chris Weston (www.chrisweston.uk.com) needs little introduction to regular *Digital Camera* readers, having changed his vocation less than a decade ago to concentrate on a career as a full-time wildlife photographer.

Interspersing his global travels with workshops, seminars and books on photography, Weston's work demands far-reaching lenses to make contact with his subjects, yet his preferred lens choice is perhaps not what you might expect from a man whose job sees him stalking often timid and sometimes dangerous animals.

Not using Nikon? Try this...

Canon: EF 70-200mm f/2.8L IS II USM
Sony: 70-200mm f/2.8 G

A telephoto lens is a lens with a long maximum focal length. Very long lenses (eg, 600mm) tend to have a fixed focal length, but long lenses can also be incorporated into a zoom unit (eg, 70-200mm).

Which lens do you most often use for your wildlife shots?
My workhorse lens is Nikon's 70-200mm f/2.8 AF-S VR, which I use on my D3x, D3 or D700. All my cameras are full frame, so the lens acts the same way it would for 35mm film, with the same angle of view. I use the lens throughout its focal length range, including the relatively short (for wildlife) 70mm end of the zoom.

That does seem quite 'short' for wildlife photography. Why is this your most commonly used lens?
For me, the 70-200mm zoom has several advantages. It's beautifully light, so it's easy to hand hold and carry, and it balances very well with my camera bodies. In addition, the f/2.8 maximum aperture is something I often need because a lot of wildlife is most active in low-light conditions.

Above
Telephoto lenses compress the appearance of space between objects in the frame, making them look closer together

I prefer the shorter focal length range because it forces me to focus on field craft, which usually means I get a much more intimate and dynamic image than I would get with a 500mm or 600mm super-telephoto.

Would you recommend using a zoom over a prime for wildlife shots, then?
In terms of reacting to circumstance, the ability to fine-tune the focal length makes working with non-co-operative subjects like wildlife less

"If the subject moves closer or further away, it's more practical to adjust the focal length"

Lens names and abbreviations

NIKON 70-200MM F/2.8G ED-IF AF-S VR

70-200mm: The focal length of the lens will either be a single number for a prime lens, or a range of values for a zoom; here, it's 70mm through to 200mm.

f/2.8: This is the lens's maximum (widest) aperture setting, which tells you how 'fast' the lens is. The wider the maximum aperture, the better suited the lens is to shooting in gloomy, low-light conditions.

G: Nikon manufactures two types of lens – G and D. G-type lenses don't have an aperture ring, which means the aperture has to be set from the camera body.

ED: Indicates that the lens uses Extra-low Dispersion glass to minimise chromatic aberration, which can be a problem, especially when shooting with telephoto lenses like this one.



IF: Short for Internal Focusing, the lens will stay the same size as it focuses – useful if it's already a large telephoto. Non-IF lenses extend as they focus, becoming longer.

AF-S: AF denotes autofocus, while the 'S' indicates the lens is fitted with Nikon's fast and quiet Silent Wave Motor (SWM) to focus the lens.

VR: Vibration Reduction, or VR, is Nikon's proprietary lens-based image stabilisation system. Canon lenses use Image Stabilizer (IS) technology instead.

ESSENTIAL LENS GEAR: TELECONVERTERS

If your budget doesn't stretch to a new lens, a teleconverter to use with your existing lenses is a more wallet-friendly solution. However, although it will potentially allow you to double your focal length for a little extra 'reach', a reduction in the amount of light reaching the sensor – by two stops with a 2x teleconverter – means using a slower shutter speed, wider aperture setting, or a higher ISO, so be sure to keep your camera steady.



frustrating. Often, if the subject moves closer or further away from the camera, it's more practical to adjust the focal length than reposition the entire camera (and tripod), which could disturb the subject and make you miss the shot. You also don't have to change lenses as often, which reduces the chances of dirt and dust getting onto the sensor.

The downside to zooms is that they can make you lazy – focal length should determine camera position, not vice versa, so you need to decide which focal length will give you the best composition and then move the camera to suit. Don't just sit in one place zooming in and out because you can't be bothered to move.

What are the advantages and disadvantages of using long lenses?
In practical terms, you don't have to get so close to your subject, which means you can keep a comfortable distance and still get the shot. This is important with shy and skittish subjects, like a lot of British wildlife.

Visually, long focal lengths reduce depth of field, which can help isolate the subject and/or blur distracting background clutter. They also appear to compress space, making objects in the scene appear closer together than they actually are. On the other hand, their narrow angle of view and limited depth of field makes it difficult to take a shot of wildlife that creates a 'sense of place', as a lot of the background will be cropped or blurred.

Below
Using a long telephoto lens enables you to keep a safe distance from unpredictable or shy subjects



How do you keep a big lens steady for the sharpest results?
It depends whether I'm working from a vehicle, a hide or out in the field. Shooting from a vehicle, the most effective support is a good-sized beanbag, but when I'm working from a hide I'll use a tripod sturdy enough to carry both my camera and lens.

In the field, I use a tripod whenever it's practical, but if it isn't possible I'll use a monopod for added stability, or I'll handhold the camera. If I have to shoot hand-held, I'll lower my centre of gravity and fire the shutter at the bottom of my breathing cycle. I'll also activate VR (Vibration Reduction).

Do you have any other advice on getting the best out of a telephoto?
As with any lens, telephotos are at their sharpest (optically) at mid-range apertures, such as f/8 and f/11, so stick to these if possible and avoid the widest and smallest apertures.

Unless you're hand-holding the camera (or using a monopod), using a remote to fire the shutter will help minimise vibration, as will the Mirror Lock-up function. If you're using a beanbag or tripod to support the lens, place a small beanbag on top of the lens – this will weigh it down slightly and further reduce any movement.

How to keep your shots sharp



1 Get some support

Always use a sturdy tripod for close-up work because the slightest vibration will be magnified and blur a shot. I use a carbonfibre Gitzo Mountaineer, which is great for fitting into my suitcase when I'm travelling, and I also have a couple of Benbo tripods that are useful for getting into awkward positions.



2 Use Mirror Lock-up

If your camera has it, use the Mirror Lock-up facility and shutter delay. This will raise the internal mirror before the shutter is released and help minimise any vibration. It may be necessary to cover the eyepiece if you're doing this, just to avoid any stray light hitting the sensor.



3 Fire remotely

Use a cable release or the camera's self-timer to trigger the shutter – the self-timer isn't ideal, but it's useful if you've left your cable release at home and you're out in the field. Again, this is to help ensure that the camera moves as little as possible when the exposure is made.

Macro magic



Andy Small swears by macro lenses for getting up close and personal with flowers and plants

PHOTOGRAPHER BIO



Andy Small (www.andysmall.com) is "fascinated by the intricate structure and design found in nature" or, more specifically, the subtleties revealed in flowers and plants when they're put in front of his macro lens.

To ensure these details are faithfully recorded, Small relies on Zeiss lenses – not on a Sony D-SLR as you might expect, but a manual focus Zeiss 100mm f/2 Makro-Planar T* lens that he uses on his faithful Nikon D300.

Not using Zeiss? Try this...

Canon: EF 100mm f/2.8 Macro USM
Sony: 100mm f/2.8 Macro

A macro lens is a lens specifically designed for close-up photography, the idea being that the image projected onto your camera's sensor is the same size (or larger) as the subject you are shooting.

Which focal length would you recommend for macro shots of plants and flowers?
I've only ever used 100mm lenses for my flower work. I find that a slightly longer focal length means I don't have to get right on top of the subject, which gives me a bit of breathing space. It will also get me closer to subjects that may otherwise be just too far away with a 50mm or 60mm lens. Right now, I'm using a 100mm full-frame lens on a DX-format sensor, so the effective focal length is longer still – more like 150mm.

Is there an optimum aperture for macro work?
Because I love detail, I invariably find myself closing the lens down to its smallest aperture, which with my current lens is f/22. But the aperture I choose will largely depend on the effect I'm after – it's often desirable to blur the background so more emphasis is placed on the flower, in which case I'll use the camera's depth of field preview to check which aperture gives the desired result.

Generally, f/8 and f/11 are the most common apertures I work with if I'm not stopping the lens all the way down, and if I'm working outside in windy conditions then I have to open the lens up to keep the shutter speed short so I don't get blurred shots.

You're currently using a manual focus lens. Is it better to focus manually, or would you rely on the camera's AF if you had the option?
Even when I had an autofocus macro lens I always focused it manually. This is simply because the depth of field in macro work is minimal and I want to know that the focus is where *I* want it, not where the camera chooses to place it. I do keep an eye on the 'in focus' indicator in the viewfinder, though, just to make sure.

How do you overcome issues with shallow depth of field?
It's quite probable that you won't get the whole subject in focus, especially outside on a windy day, so you need to be selective and decide which part of the subject to emphasise through sharp focus.

Left
A flower from the Leucospermum, or 'pincushion', family, shot with a Nikon D300 and Zeiss 100mm f/2 macro

JARGON BUSTER: TRUE MACRO?

Many standard zoom lenses offer a macro setting, but this doesn't mean they are a genuine alternative to a dedicated macro lens. The definition of macro photography is an image where the subject is shot at a magnification of at least 1:1 (life size), so it is recorded on the sensor at the same size as it is in reality (or larger). Most zooms don't deliver this, even if they claim to have a 'macro' capability.

"You need to be selective and decide which part of the subject to emphasise with sharp focus"

Our eyes aren't used to looking at the world the way a macro lens does, so this can be used as a creative advantage – it's possible to make part of the subject 'invisible' just by selectively focusing on a different area and choosing your aperture carefully.

Do you use digital focus stacking?
I have yet to explore this because I try to rely on software as little as possible. It is something I'm keen to try one day, though, and from what I've seen it does seem to be a useful tool [for more on focus stacking see page 88].

Are there any accessories that are essential for macro photography?
I've used a whole range of accessories over the years, but I guess the one that I've found most useful is a fine-focus unit that lets me make tiny adjustments to the camera position – sideways to fine-tune the composition and forwards and backwards for fine focusing.

With macro work, moving the camera and the tripod around when composing a shot can be endlessly frustrating and time-consuming, because the movements tend to be very small and you have to recompose the picture with every adjustment you make. If I'm working in the studio I tend to leave the camera on the tripod and move the subject in order to explore a new angle, rather than moving the camera itself.



LENS GEAR: EXTENSION TUBES

An extension tube moves any lens away from the camera body, enabling it to focus closer. Ranging from simple tubes that will have you relying on manual exposure metering and focus, through to more sophisticated extension tubes that will retain TTL metering and, in some cases, autofocus, there's something for every budget, but what they all have in common is their ability to let you fill the frame with the most diminutive subjects.

Creativity on a budget

Don't have the cash for a top pro lens? Check out the great results you can get with the Lensbaby, yours for £80!



Our pro photographers have introduced a range of specialist lenses, and how to make the most of them, but don't forget cheap and fun alternatives such as the Lensbaby. Here, Ben Brain shows how to get stunning effects with the entry-level Lensbaby, which costs a mere £80 – less than a swanky meal!



1 Baby, it's you...

A Lensbaby is a cheap plastic optic that's mounted on a movable bellow and has a fixed aperture. The lens creates a dreamy effect. You're not going to get pin-sharp shots, but what you lose in sharpness you make up for in quirkiness.



2 Bend it

Focusing requires a tricky combination of squeezing and pulling on the lens itself. It can also be angled slightly to produce somewhat unpredictable results with blurred edges. It's a bit like a really cheap tilt-and-shift lens.



3 Control exposure

You'll need to shoot in Manual as the aperture is fixed and won't be recognised by the metering system. Use the histogram to establish a good exposure, then look through the viewfinder, pulling and squeezing the lens until you get a cool effect.



4 Accessorise!

Lensbaby makes a range of products that offer more quality and control than the 'Muse' we used. There's also a wide range of accessories, such as Fisheye, Soft Focus and Pinhole adapters. Find out more at www.lensbaby.co.uk.

MORE CREATIVE KIT



Looking for more ways to get creative with your shots? Why not try a dedicated tilt-and-shift lens, such as the 24mm f/2.8D ED PC-E Nikkor Tilt and Shift lens (above). While the quality is superb, it is expensive (£1,399), but you could always hire one.

Alternatively, try a 'toy camera', such as this Diana F+ Colette, which costs a much more affordable £95 (see below). However, most use film, so you'll have to factor that cost in too.



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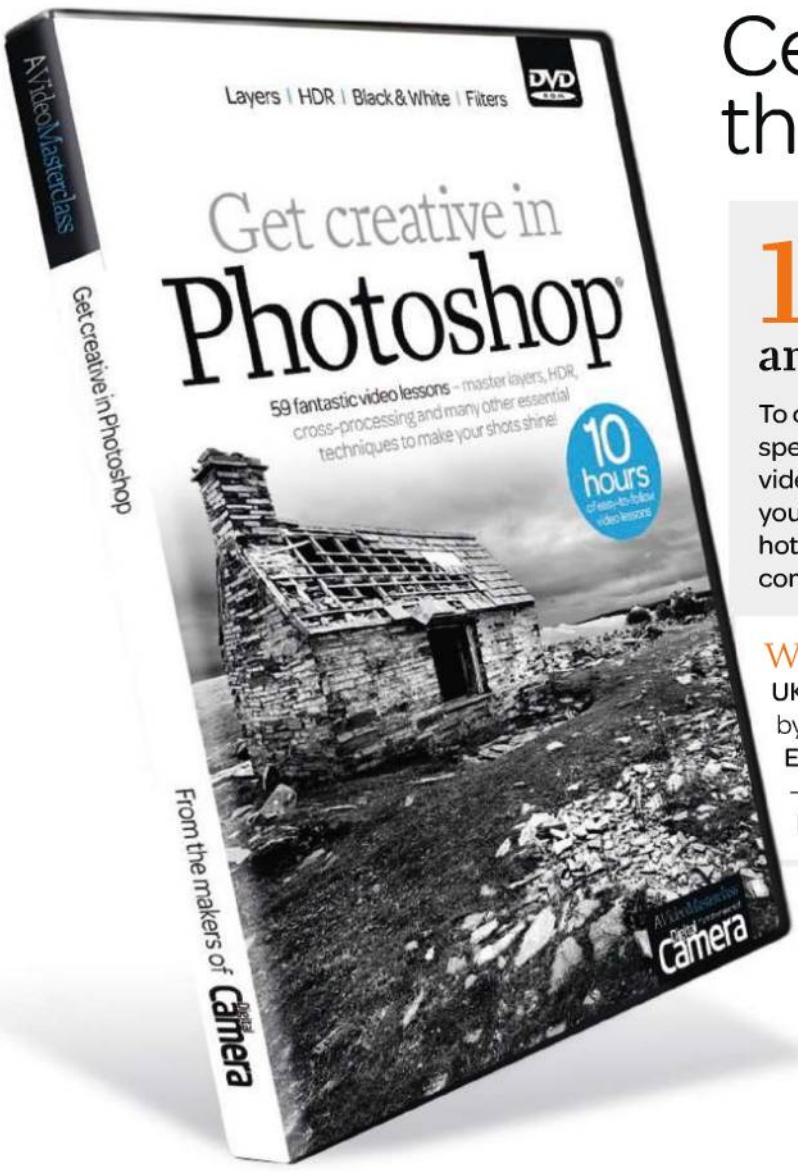
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16 PAGES OF EXPERT ADVICE FOR SLR USERS



SHOOT!

Your complete camera skills improvement plan

THIS MONTH'S HIGHLIGHTS



58 Core Skills
Discover how to see like a pro with our essential checklist for memorable coastal shots



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When and how to use Manual Focus to ensure perfectly sharp shots every single time



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Summer foliage looks fantastic in infrared, so don't miss our guide to getting this striking look



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72 Kit Hacks
Expand the versatility of your flashgun, using nothing more than Velcro, straws and sticky tape...



CORE SKILLS

SEE LIKE A PROFESSIONAL

Think pro thoughts when shooting seascapes and you'll transform your coastal shots from average to amazing

Great landscape photography is about more than just turning up to a beauty spot with a camera. You also need to learn how to 'see' a scene like a professional photographer in order to get the best results.

This may sound like some kind of esoteric knowledge that's only granted to a few, but a lot of it is actually common sense – it's all about thinking ahead and being self-critical. For example, once you've roughly decided where to go, check out the weather forecast, tide schedule and sunset and sunrise times. The internet is an invaluable resource. Using Google Maps (http://maps.google.co.uk) and the Met Office (www.metoffice.gov.uk), we were able to establish the best time for a trip to Pembrokeshire quickly and easily. Despite arriving in the late afternoon and returning the next morning we were still able to squeeze in a six-hour shoot and come back with great shots!

Ben Brain (Future)



ESSENTIAL SLR SET-UP TIPS

Three simple steps to ensure better shots



Keep it steady

As the light reduces, you'll find your exposures become longer, so take precautions to keep your kit as steady as possible and avoid camera shake. Use a sturdy tripod, a cable release (or your D-SLR's self-timer) and activate the Mirror Lock-up function.



Balance skies

When shooting most coastal scenes, there will be a difference between the brightness of the sky and the land. This difference is often too much for the camera's dynamic range to deal with. Carry a set of ND grads, which can be used to balance the exposure.



Use the histogram

The histogram is an essential tool to help you establish a good exposure. Check it, making sure the tones are distributed as you want them. Even in the relative low light of this scene, there was still a strong difference between the sky and foreground.

Top tips...
GET TO KNOW A LOCATION

Tide times
If you hope to take advantage of the magic hours (the first and last hours of sunlight) you'll need to make sure the tide is where you want it for the best results. A few clicks on Google and you'll have access to the local tide times. If possible, plan your trip around a receding tide – you'll find your feet stay drier!

Do your homework
If you're going to a new location, you don't need to arrive blind. Take a look at online satellite maps such as those on Google Earth and get an idea of the lay of the land before you get there. You should be able to work out where the sun will rise and set. An image search might also give you an idea of what other photographers have done in the same location. These will be good building blocks for your own work – or give you an idea of the clichés to avoid.

Light
Establish where and when the sun will set and rise, and plan your shoots around these times. Ideally, you want to be on location and setting up an hour or so before sunrise, and the same at sunset. In the summer months, this will mean you'll be early to rise and late to bed. It's tiring, but the results make your efforts worthwhile.



PHOTO SCIENCE
Why this photo works
1 There's a strong composition, with good foreground interest, dynamic leading lines from the watery reflections and a strategically placed horizon. These factors all lead the viewer into the frame and create a balanced composition.
2 The manually set exposure and use of grads capture the mood of the scene, revealing a hint of detail in the dark rocks.
3 The creative use of white balance has rendered a delightful colour palette.

When you arrive at your location, you'll need to scan the scene and try to predict where the light and tide will be at specific times. Being able to anticipate conditions will give you a distinct advantage. Then, try to adjust your frame of mind and pre-visualise the finished image. Imagine what it would look like on a gallery wall or in a book. Analyse the scene and assess exactly what you have to do to get the shot you want. Assess what processing you might have to do later and what you can do to minimise it in camera. After all, minimising the amount of computer time you need to put into an image is surely a good thing. Most good professionals will be able to tell you before they set out what gear they'll need to get the shot, and even what the exposure will have to be. Modern LCD screens and histograms (see page 66) enable you to see exactly how a scene will look, and what adjustments you need to make.


Before you start shooting, scan the scene and plan how your image will look

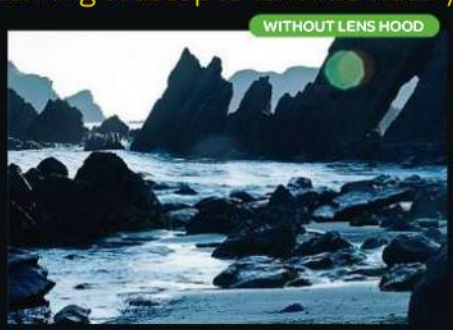
FRAMING ESSENTIALS
Composition is an integral part of learning to see like a pro. Look for interesting elements in the foreground, such as boulders, water and trees, find interesting leading lines, shapes and textures and use the basic principles of composition, like the rule of thirds (placing the subject off-centre). Make sure that no stray objects (or people) wander into the frame.

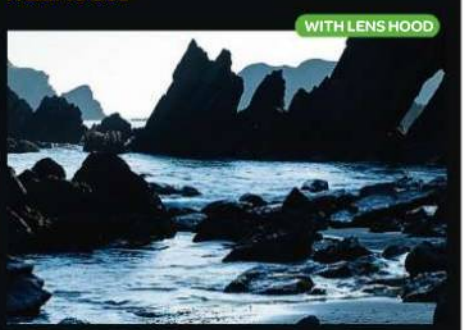
One of the best tips for any photographer? Explore a scene from all angles before you start to shoot, and at different times. When you've taken the shot, be honest – are you in the best place? If not, try again...

YOUR LENSES: HOW TO MINIMISE UNWANTED FLARE
Shooting into the sun? Don't let stunning seascapes turn into watery washouts

If you're shooting towards the sun (contre-jour) during the magic hours when it's low in the sky, unwanted lens flare can ruin an otherwise great shot. Luckily, the solution is pretty simple. Attach a lens hood and you'll prevent light from directly striking the lens.

However, when the sun hits your lens at certain angles, you may find that even a lens hood is too close to the lens to be effective – hold your hand or a small piece of card above the lens to shield it from the light.





GEAR CRAFT

Manual focus made easy

There are times when you can't rely on your camera's autofocus and need to adjust focus manually. Stay sharp with our easy guide

Why should you bother with manual focus (MF or M), especially with all the amazing advances in autofocus (AF or A) technology? Well, there'll be times when all the AF points in the world won't help you get sharp shots. Often, activating MF is the only way of beating the dreaded blur.

Macro photographers often use MF to dictate their focus point (see page 74). So do low-light shooters and photographers working in tricky situations, such as shooting through glass, or perhaps focusing on a distant horizon on a misty morning, when autofocus may struggle to get a lock. Sports photographers benefit from pre-focusing in MF, especially if they can predict exactly where the action is going to take place.

So don't ignore the little AF/MF (or A/M) switch on your lens barrel, and remember that when the focusing gets tough, switching to MF might just get you going.



Master the art of manual focus and you'll be a more confident photographer



01 Flick the switch

Locate the AF/MF switch and move it from AF (autofocus) to MF (manual focus). The switch might be in different locations depending on the camera system and lens you're using, but typically, it will be somewhere on the lens barrel.



02 Do the twist

To manually focus a lens, you simply twist the focus ring. You'll be able to see when the image is sharp through the viewfinder. You might have to twist the focus ring back and forth, moving through and beyond your chosen point of focus until you see that focus is spot on.



03 Get some help

Different shooting situations will call for different focusing techniques. In really low light – when you're shooting at night, for example – try using the distance numbers on the lens to judge your subject's distance from the lens. Most lenses will have this feature.



04 Review your shots

To double-check that your shots are pin-sharp, use your D-SLR's LCD screen for a close look. All you need to do is zoom in and navigate to the specific area you focused on. This way you should get a good idea of whether your image is sharp. If it's not, just refocus and shoot again.



FIVE-MINUTE MASTERCLASS

Seascapes with a twist



Pro Adam Clutterbuck reflects on why sometimes, it's hip to be square

What are your black-and-white secrets?
"My approach is about strong shape and texture, which in my opinion are essential components of black-and-white photography. So I do tend to see the landscape from this perspective."

Why the square format?
"I find it quite instinctive for some reason, and interestingly I find I struggle with the 3:2 format quite a lot. Subconscious decisions such as horizon or subject placement occur naturally as part of a composition that 'feels right'."

What's your top tip for long exposures?
"Don't use it for its own sake. Use it to improve your composition – to provide a dynamic to your image, to simplify (water, for example) or convey emotion through abstraction (by removing perfection)."

How does the coast inspire you?
"I was brought up near the sea and a love of the coast and the wind has never left me. I find the strong shapes and opportunities for minimalism that I require for my work at the coast more readily than inland, but I try not to overlook inland landscapes completely."

What are your creative influences?
"I noticed the work of Michael Kenna and David Fokos early on in my exploration of photography. I was certainly inspired by their brand of minimalistic art, the desire to strip a composition to its bare bones to enhance the photographic subject."



Scenes with deep blue skies and lots of foliage, such as this area in the Brecon Beacons, are great for infrared photography

CREATIVE ZONE

Capture infrared

Looking for a way to get creative with landscapes? Infrared is the way forward

Photosynthesising summer foliage radiates infrared light, which, if captured correctly, can give a conventional scene a dream-like quality with ghostly hues and magical tones (as in the images opposite).

Infrared light is not visible to the human eye. In fact, we're only able to see light that's within the 400-700nm (nanometer) range of what's known as the 'visual continuous spectrum'.

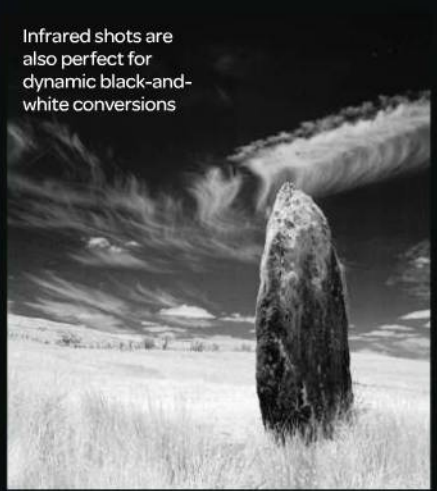
Infrared starts at about the 700nm point. Most digital cameras are actually sensitive to infrared light, but manufacturers place filters in front of the sensors to avoid recording it.

There are two ways to capture infrared shots. If you've got an old D-SLR gathering dust, getting it converted is a great way of giving it a new lease of life. A cheaper, but less effective, alternative is to use a specialist infrared filter, but the effect won't be as strong and exposure times will be exceptionally long. Here, we'll show you how to get your camera converted, what to look for when shooting an infrared scene and how to get the best out of your infrared files in Photoshop CS.

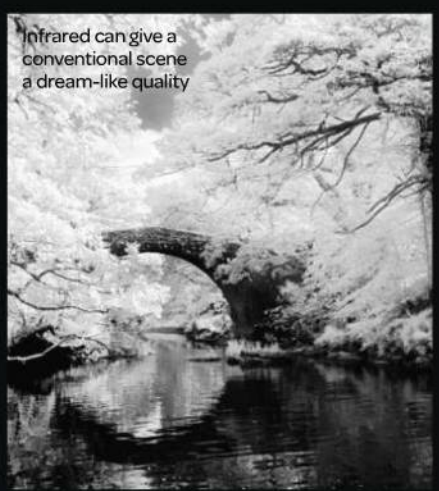




Here, we used a converted Nikon D70, which captured the infrared radiating from the foliage. Taken with a 20–35mm f/2.8 lens (1/400 sec at f/11, ISO200)



Infrared shots are also perfect for dynamic black-and-white conversions



Infrared can give a conventional scene a dream-like quality

How to... GET THE MOST FROM INFRARED

Use Photoshop CS's Channel Mixer to create ghostly hues



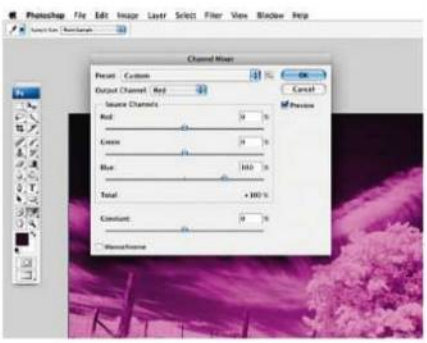
01 Convert your camera

We had an old Nikon D70 converted by Advanced Camera Services (www.advancedcameraservices.co.uk) for around £300. If that's beyond your budget, try a filter such as the Hoya Infrared R72 (£30) for similar results.



02 Open in Photoshop

To create colour infrareds in Photoshop CS, use the Channel Mixer to swap the Red and Blue channels. In the Red channel move the Red slider to 0% and the Blue slider to 100%. Do the opposite in the Blue channel.



03 Tweak the Levels

Select Auto Levels then Auto Colour to clean up the image and create a ghostly look. There's an element of trial and error here. In Elements, a simple mono conversion gives you a cool black and white infrared effect.

PHOTO ANATOMY

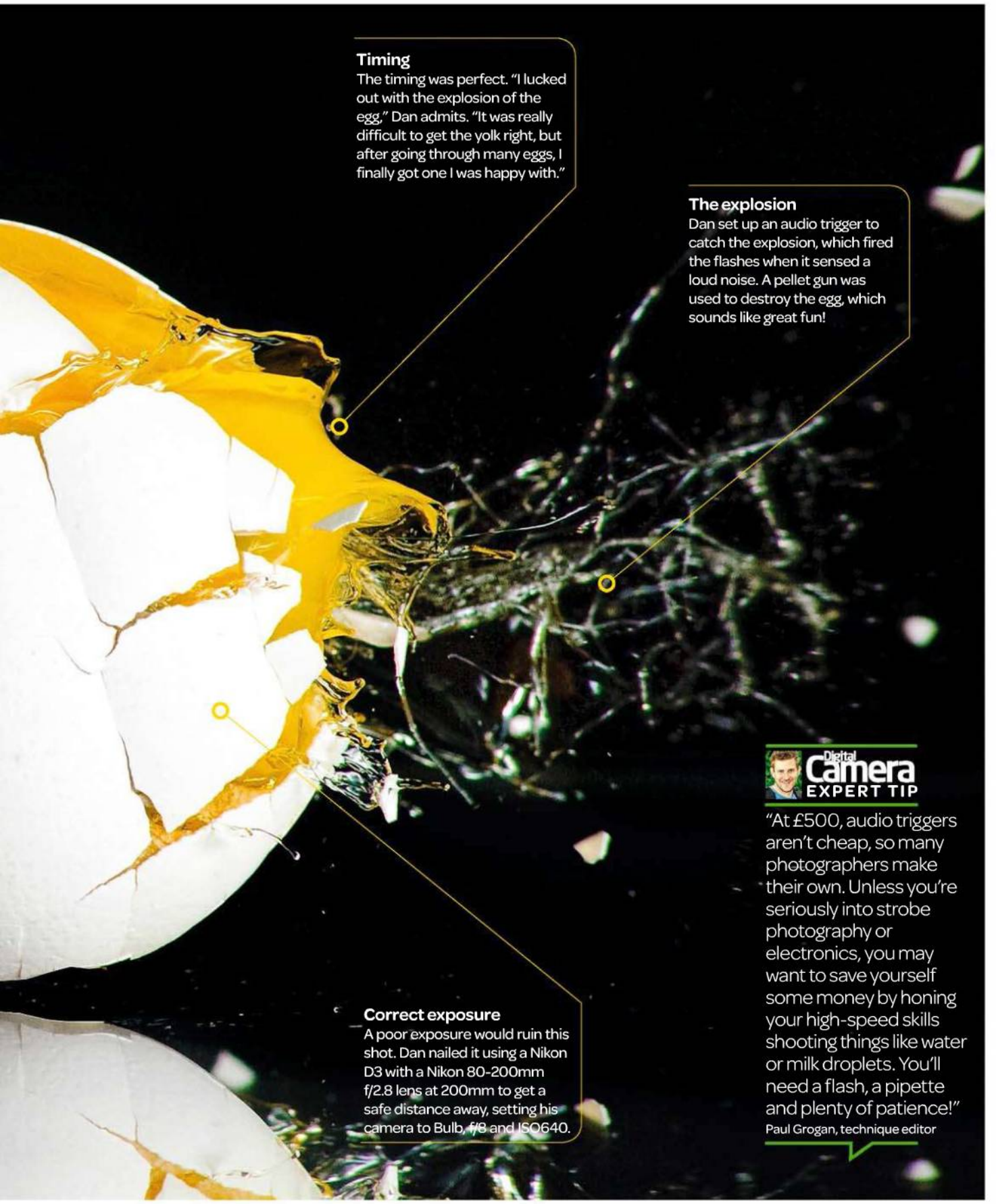
EXPLODING EGG

What are the ingredients for a truly great shot? Well, eggs are a good start... We dissect Dan Newton's tasty high-speed experiment



Lighting
Dan used multiple speedlights at 1/128th power to freeze the action with 1/40,000 sec flashes, rather than a fast shutter speed. A high ISO yielded decent depth of field in these conditions.

Careful set up
In a darkened room, Dan used an open velvet-lined box to cut reflections, with glass on top. Nikon SB-800 speedlights provided the only lighting and Dan wore protective clothing.



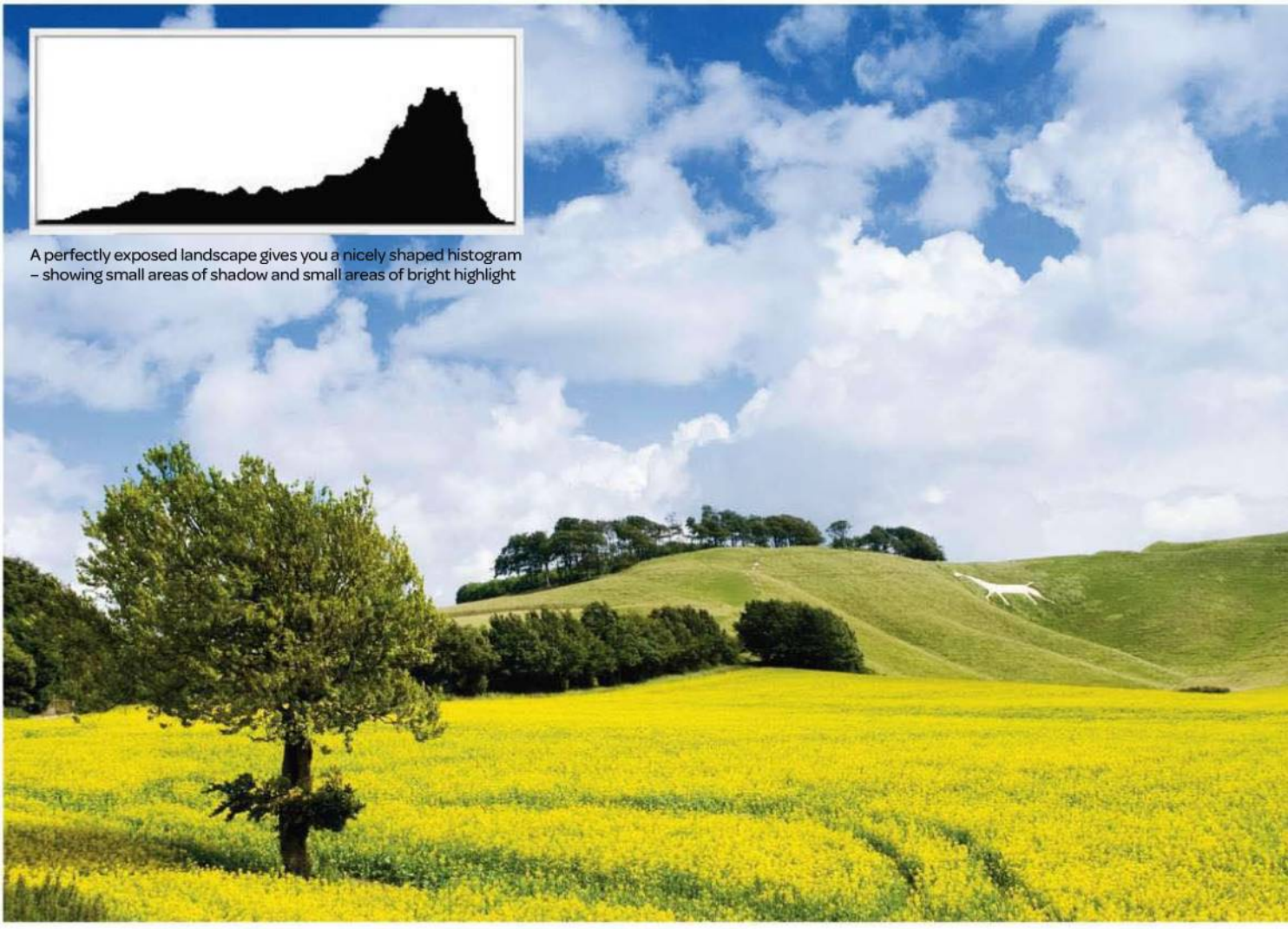
Timing
The timing was perfect. "I lucked out with the explosion of the egg," Dan admits. "It was really difficult to get the yolk right, but after going through many eggs, I finally got one I was happy with."

The explosion
Dan set up an audio trigger to catch the explosion, which fired the flashes when it sensed a loud noise. A pellet gun was used to destroy the egg, which sounds like great fun!

Correct exposure
A poor exposure would ruin this shot. Dan nailed it using a Nikon D3 with a Nikon 80-200mm f/2.8 lens at 200mm to get a safe distance away, setting his camera to Bulb, f/8 and ISO640.

Digital Camera EXPERT TIP

"At £500, audio triggers aren't cheap, so many photographers make their own. Unless you're seriously into strobe photography or electronics, you may want to save yourself some money by honing your high-speed skills shooting things like water or milk droplets. You'll need a flash, a pipette and plenty of patience!"
Paul Grogan, technique editor



A perfectly exposed landscape gives you a nicely shaped histogram – showing small areas of shadow and small areas of bright highlight

JARGON BUSTING

What the hell is... A HISTOGRAM?

Seen a histogram graph on your D-SLR or PC screen but not sure how to use one to fix exposure? Read on: it's easier than you think...

A histogram sounds like a medical test. Why do I need one?
A histogram is a type of graph. In photography, it is a way of plotting the exposure of a digital image. By looking at the graph, you can see whether a shot is too bright or too dark.

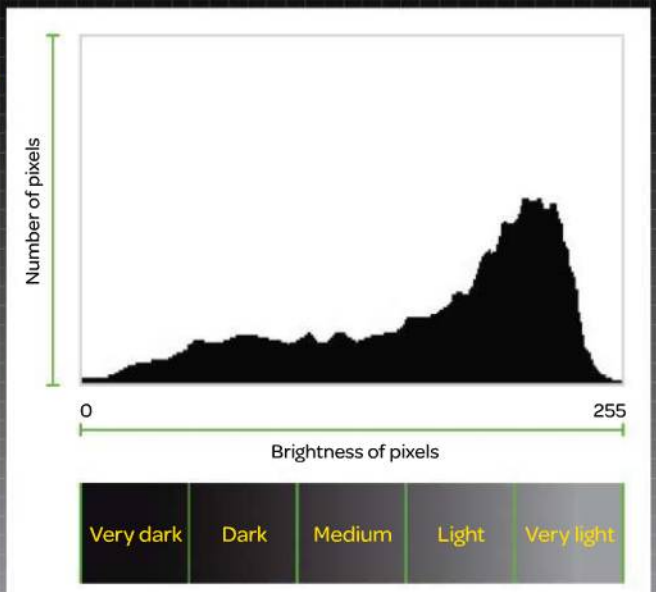
Surely I can tell this by looking at my camera's rear screen?
The histogram is a much more accurate way of judging whether the shot needs a bit more, or less, exposure. It's not just used for judging exposure: the shape and position of the graph can also tell you about the contrast of the lighting in the scene.

How do I see the histogram?
You usually look at the histogram after you have taken the picture, when reviewing the shot on screen. Look at your instruction manual to find out how you get this graph shown on the LCD (and to check your camera has this facility). On Canon D-SLRs, press the Play button, then use the Info or Disp button to call up this display option. On Nikon D-SLRs use the up arrow on the joypad during playback to toggle through the display options.

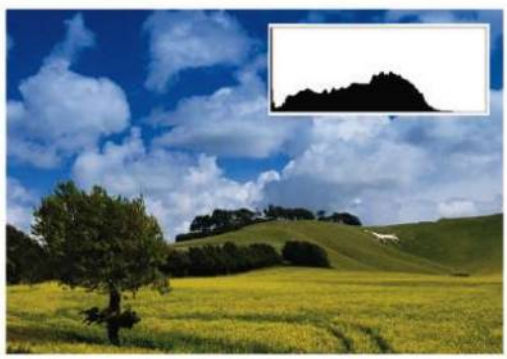
What exactly is it showing me?
The graph shows the brightness of all the pixels in the image. The brightness is plotted along the x-axis, or bottom line, and the number of pixels is plotted along the y-axis, or vertical line. To keep things simple, the numbers and units are not shown on the graph. Just remember that the left-hand side shows the darkest tones, the right-hand side shows the brightest tones, and the central part of the graph shows the midtones.

PHOTO SCIENCE
How the histogram sees in shades of grey

The histogram used by your camera is essentially the same as that used by Photoshop. The brightness of each pixel in the image is given a value along a 256-step scale – where zero is the darkest, blackest value possible, and 255 is the brightest, whitest value. The 256 steps correspond to all the brightness values possible in a typical JPEG image, which uses an eight-bit scale, where the brightness of each of the three primary colours is given a binary value from 00000000 through to 11111111.




Even slight over-exposure is fatal with landscapes


The histogram shows that the picture lacks highlight areas

Top tips... LEARNING THE LINGO

Histogram
A graph used to depict the brightness, tonal range and contrast of a digital image. Found as an option on digital SLRs and other high-end cameras – as well as in digital editing software.

Clipping
Losing detail in the highlights (or shadows) of an image due to over- (or under-) exposure in those areas. The histogram shows clipped highlights with a graph that is stacked up to the right, and shows clipped shadows as a graph that is piled up on the left-hand side.

Live View
Feature found on recent digital SLRs that enables you to view the image on the main LCD as you compose the image. To do this the mirror is raised, and the eye-level viewfinder becomes dark. This video monitor image can be very useful for framing and focusing; it also usually provides a 'live' histogram, which changes as you adjust exposure and framing. This feature is also found on cameras with electronic eye-level viewfinders, like the Micro Four Thirds Panasonic G-Series.

"If you are shooting snow scenes, for example, the graph should peak towards the right side of the graph, because of all the bright tones"

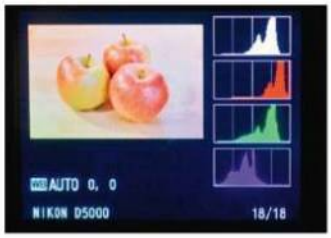
What shape should I aim for?
The shape of the graph is highly dependent on what you are taking pictures of. If you are shooting snow scenes, for example, the graph should peak towards the right side of the graph, because of all the bright tones. For normal subjects, with an average distribution of different tones, the ideal graph rises gradually from the far left outside, peaks somewhere in the middle, then falls away gradually until it has fallen to zero at the far right-hand side.

How can I tell if the exposure is wrong in my shot?
The telltale sign is if the graph is stacked up to the left or the right. If there is a peak at the extreme left-hand side of the graph, this shows that there are lots of pixels that are recording as the darkest value black available. This suggests that your shot is probably under-exposed. Similarly, if the histogram looks as if it's pushed hard to the right of the graph area, it's likely that the shot is over-exposed.

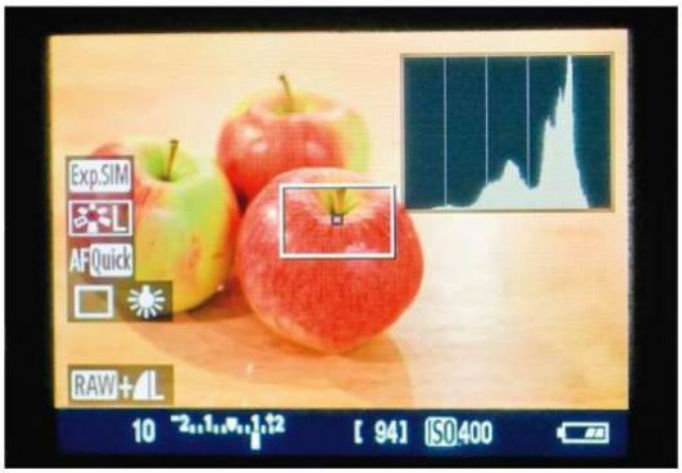
How do I change the shape of the graph?
The simplest way to do this is to take another picture of the same subject using a different amount of exposure. Take the shot with less light and the subsequent graph will have shifted to the left. Shoot with more light, and the graph will move to the right. Use the +/- exposure compensation control to do this; a plus value moves the



Some cameras offer separate graphs for red, green and blue channels...



...these give a more accurate analysis and help spot white balance problems



Histograms aren't only useful after the event. Some D-SLRs provide the option to superimpose a histogram over the image as you frame it in the viewfinder

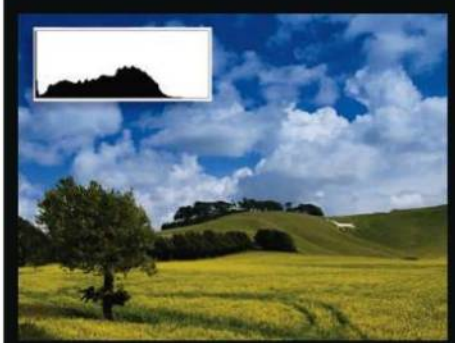
histogram to the right, a negative value shifts the graph left.

What if the graph is stacked to the left and the right?
This shows you that the scene you are photographing has both very bright highlights and very dark shadows. It is a sign of a high-contrast scene where the camera is going to find it impossible to find an exposure that captures detail and tone in all parts of the scene. Sometimes, you can get round the problem by changing the lighting (so you are not shooting into the sun, for instance, or by coming back later in the day), or by using an ND grad filter to reduce the brightness of the sky. If you have to shoot, it is usually best to adjust the exposure so the graph moves to the left, because it is easier to rescue the shadows than the highlights at the editing stage.

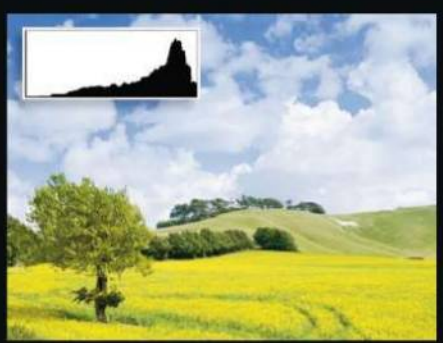
Is the graph always right?
It's the picture that counts, not the histogram – so look at the image too. The graph itself is based on the tones that would be captured by a JPEG, so if you are shooting RAW your image will capture more detail in the shadows and highlights than the graph actually shows.

How to... READ AND REACT TO A HISTOGRAM

Spot exposure and contrast problems, then correct for them to get better results



01 Under-exposed
The histogram is pushed to the left and fails to register any very bright areas on the graph. Retake the shot, dialling in a positive value of exposure compensation. Try a setting of +1, then check the new histogram.



02 Over-exposed
The histogram is stacking up at the extreme right-hand side, producing clipped highlights and burnt-out clouds. Retake the shot, dialling in a negative value of exposure compensation. Try a setting of -1.



03 High key
Sometimes the picture is meant to bright, with a histogram that peaks on the right of the graph – as in this shot. However, it's important that highlights aren't clipped, because they shouldn't all be pure white.



04 Low key
The graph here stacks up hard on the left, but isn't under-exposed because the peak on the left corresponds with the black background. Shoot so the image is as bright as possible, without clipped highlights.



05 High contrast
Shooting a white building in bright light creates a very-high contrast scene with a histogram that squeezes up at both ends. Detail is going to be lost whatever settings you use. Try a different angle or time of day.



06 Low contrast
Some scenes don't contain strong shadows *or* strong highlights and create a histogram that sits neatly in the middle. To maximise picture detail, shoot so the histogram sits as far to the right as possible.

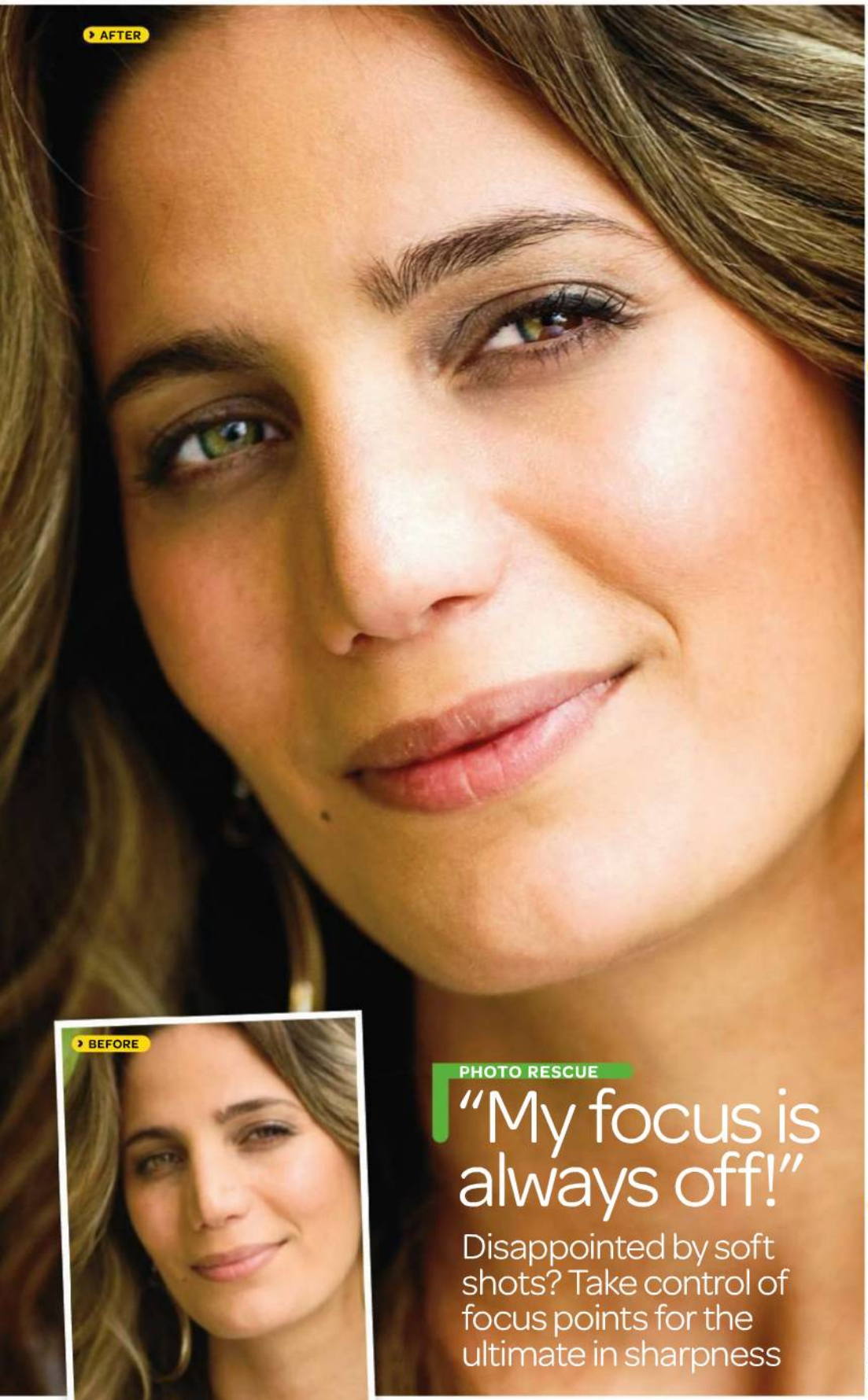


PHOTO RESCUE

"My focus is always off!"

Disappointed by soft shots? Take control of focus points for the ultimate in sharpness

GETTING THE SHOT RIGHT

Focus on these essential SLR skills



01 Use the Mode dial to select Av mode

To throw your backdrop out of focus, or isolate specific parts of a face, such as the eyes, create a shallow depth of field. Do this by selecting Aperture Priority mode and picking your lens's widest aperture – f/2.8, for example.



02 Get choosy about which AF point you use

Modern D-SLRs have loads of Autofocus (AF) points, so make use of them. After composing an image, use the viewfinder and scroll through the available AF points. Choose a single point that covers the key area.



03 Focus your shot, then fire away...

Lightly press the shutter release and the lens focuses. The area marked by your AF point should be sharply focused, so take the shot. Focus is critical with shallow depth of field, so take lots of shots to get what you need.

Ben Brain (Future)

D-SLR DISCOVERIES

Control depth of field

Master the Depth of Field preview button for ultimate creative control

Depth of Field (DoF) simply refers to how much of an image appears sharp in front of and beyond the point of focus. Using this sharp portion to restrict or widen the viewer's attention to a chosen area of your photograph is a brilliant creative technique.

Forget f-number guesswork: using your camera's Depth of Field Preview button will ensure that you take control in all situations. You'll find it near the lens mount, and holding it down lets you see the image sharpness as it will be recorded.

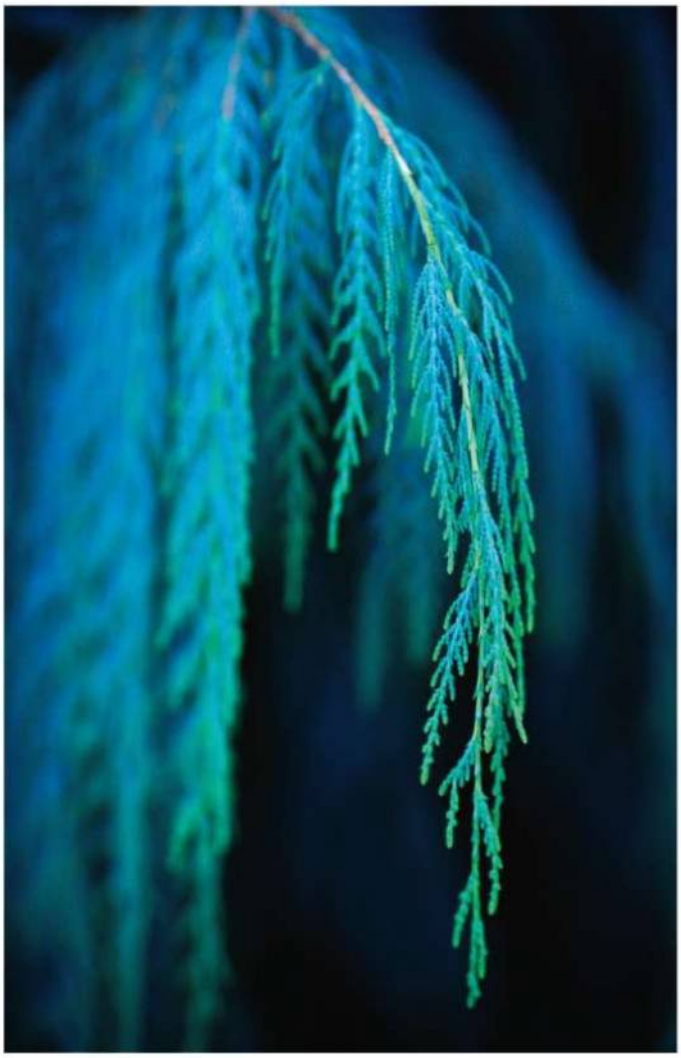
Look through the viewfinder and press the button, then watch as it mechanically stops down the aperture iris. The frame will darken as the iris narrows.

In the field you can fine-tune the DoF while looking through the viewfinder, using Aperture Priority mode to select different apertures until you're happy.

For landscape photographs, or when you want maximum sharpness, smaller apertures such as f/22 are the best. Getting really creative and picking out fine details from everyday scenes will mean shooting wide open – at f/2.8, for example.

The Depth of Field Preview is great for checking vignetting or framing errors and invaluable as a real-time sharpness preview in all situations.

"You'll find the button near the lens mount; holding it down lets you see the image sharpness as it will be recorded"



Kristian Birchall

Use depth of field to restrict or increase attention to an area of your photograph

How to... USE DEPTH OF FIELD PREVIEW

How deep is your depth? This handy button reveals all







01 Use Aperture Priority
Set your camera to Aperture Priority (Av) to retain full control over the aperture and use depth of field to get the best creative results. Begin with an average aperture of around f/8.

02 Find the DoF button
Not all D-SLRs have a Depth of Field Preview button, but if your camera does it will be located near the lens mount (see above) and should make a mechanical 'clicking' sound when pressed.

03 Hold down the button
Look through the viewfinder and hold down the Depth of Field Preview button. The frame will immediately become darker. Scroll through the aperture options to see the effect the change has on your shot.

A pro's favourite places to photograph...

Birds

Wildlife photographer Guy Edwardes picks his top five twitching spots

Digital Camera EXPERT TIP

"If light levels allow, turn Image Stabilisation (IS) or Vibration Reduction (VR) off to improve AF performance when photographing birds in flight"
Guy Edwardes, pro wildlife photographer

1



The Norfolk Broads National Park, Norfolk, UK

"Some of the best freshwater wetlands in the UK – good for species such as great crested grebe (pictured), heron, Cetti's warbler, marsh harrier and kingfisher. Visit during spring and early summer, when birds are involved in courtship and breeding, or in the winter months."

2



Skomer Island, Pembrokeshire Coast National Park, Wales

"Although perhaps best known for puffins, Skomer Island also provides good opportunities to photograph razorbill (pictured) and chough. It is best to stay on the island to stand the best chances of capturing images in good light. Visit in May, June and early July."

3



Reeth, The Yorkshire Dales National Park, UK

"The area around Reeth in North Yorkshire provides some of the best opportunities for photographing red grouse from a vehicle. You'll need a long telephoto lens and a beanbag for support. Early mornings are generally best. Late July and early August is the best time to visit, as the heather is in full bloom."

4



Gigrin Farm, Rhayader, Powys, Wales

"The Red Kite Centre (www.gigrin.co.uk) has to be one of the UK's most spectacular wild bird experiences. During the winter months, up to 500 red kites come to be fed every day. It's best to book one of the special hides."



5

Brownsea Island, Poole Harbour, Dorset, UK

"This Dorset Wildlife Trust reserve is best visited during the early summer when the public hide provides close views of breeding common and sandwich terns. You will need at least a 300mm lens to achieve frame-filling images, but there aren't many places in the UK where you can get this close to breeding terns."

BIG BEN'S KIT HACKS

Press pro **Ben Birchall** shows how foam, straws and Velcro can boost your flashgun's creative power

Using flash to inject impact into your portraits involves more than just whacking it on top of your camera and firing off a few frames. Even off-camera lighting needs pepping up now and again, so for those days when you need something special, why not use a flash spotlight effect using a home-made snoot and honeycomb?

With nothing more than some foam, black drinking straws and Velcro, found in most art shops, you can make a flashgun light modifier that you're bound to use time and time again.



01 Attach some Velcro

Stick a strip of 'hooked' self-adhesive Velcro tightly around the top of the flashgun. Make sure it butts right up against the flash head and leave the seam on the top.



02 Channel the light

Make a snoot by cutting a strip of thin black craft foam 8cm wide and long enough to wrap around your flash. Stick Velcro on the foam so it fits snugly.



03 Now for the honeycomb

Build a grid or 'honeycomb' structure by attaching some black drinking straws to a long strip of sticky tape, and rolling it into a natural rounded shape, as above.



04 Perfect your snoot

Trim the straws with scissors or a knife so the honeycomb fits inside your snoot. Roll the straws in your hands to shape them, and then attach a strip of Velcro to the end.



05 Finishing touches

Unwrap the snoot, fit the honeycomb and Velcro it back together. Fit your snoot to your flash and point it directly towards the area you want to highlight in the frame.



06 Try it out

Spot-lit flash will give your portraits a creative edge. Experiment by varying the flash's distance from the subject. Moving closer produces a strong, small spot.



BEN'S TOP TIP

If the spotlight effect you create is too strong, or you want a wider spread of light in your shot, just use the snoot without the straw grid inserted.

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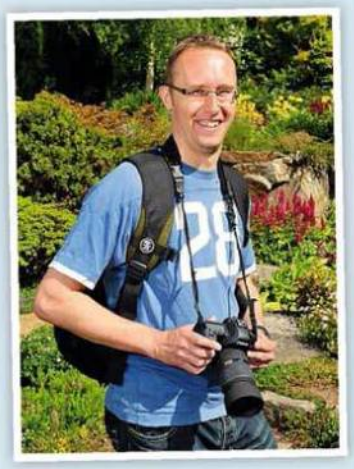
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The Photo Fixer

Reader Neil loves macro photography, but his images lack flower power. Can our photo Titchmarsh **Paul Grogan** help?



READER SOS: PROBLEMS WITH MACRO

Q I love taking nature and landscape shots, and I feel I've got the hang of shooting the bigger picture. But when it comes to getting up close and personal with my macro lens I struggle with focusing, and I'm never sure how to light and compose my shots so that they really stand out. Can you help take my flower close-ups to the next level?

Neil Parker, Bristol



Location shots: Dave Caudery (Future)



Budding, but not blooming?

Reader Neil boasts a portfolio of nature and landscape images that many full-time pros would be proud of, but when it comes to macro photography he's more budding than blossoming. The seeds of success are definitely there, they just need to be shown the light. As you can see from the examples pictured below, his flower shots are hardly wilting on the vine, but they're not exactly prize-winners either.

To learn precisely what the problem was, I took Neil to Kilver Court Gardens in Somerset to have a look at his images and settings and to show him some guaranteed ways to improve his hit-rate. Can I help him nurture his nascent close-up skills? Read on to find out...



THE DIAGNOSIS

Background information



Reviewing Neil's shots reveals that tighter composition and better lighting are the keys to improving his hit rate





Neil's flower shots are nice enough, but they're a bit flat, and do little to direct the viewer's attention to his subjects' most interesting features. They'd also benefit from much tighter cropping in-camera

The Photo Fixer's advice

It's clear from looking at Neil's online portfolio that he knows his way around his camera (a Canon EOS 5D Mark II), but by his own admission his macro portfolio isn't up to the same standard as some of his best work. Despite wanting to get to grips with his Sigma 105mm macro lens, he confesses that he hasn't used it much outdoors, and that he relies on Photoshop to correct any problems.

Neil's settings are spot on: he shoots in RAW in Aperture Priority mode, and tries to limit his ISO to 200 or less to minimise grain. His composition, however, is a bit hit and miss, and he admits to relying on autofocus, with mixed results. He's also never thought to use reflectors for macro work, and despite being the proud owner of a dedicated macro ringflash, he's hardly ever used it.

Finally, Neil tends to rely on his lens's maximum aperture of f/2.8, without realising he can use aperture more creatively to dictate how much of his subject appears in focus.

SHOOTING ADVICE

Macro tips



1 Get a grip
When you're shooting flowers outdoors, the lightest breeze can cause a flower to flutter, making it much harder to get sharp shots. The solution is to clamp it in place, taking care not to crush the stem. A clamp won't stop the thinnest stems from swaying, but it will help to steady them more quickly between gusts.



2 Behind the scenes
One of the keys to great macro shots is isolating your subject. A wide aperture is one way of achieving this, but sometimes background clutter is hard to avoid. Another solution is to place a sheet of card behind your subject: white will give it a botanical feel, while coloured sheets can be used to complement its colours.



3 Down and dirty
Neil soon realised that shooting flowers outdoors involves spending a lot of time on your knees and elbows. So he was grateful when I produced a gardener's mat from my bag of tricks. If you plan on spending a lot of time taking flower shots, it may end up being the best fiver you have ever spent.



Use a tripod to beat shake if you're using a long macro lens – such as Canons's EF 180mm f/3.5 – at slow shutter speeds. However, shooting handheld can allow you to compose shots more freely

PHOTO FIX #1

Stay sharp

As Neil knows only too well, setting a wide aperture on a macro lens reduces the depth of field to fractions of a millimetre – so much so, in fact, that if you half-press the shutter button to autofocus, and then recompose, the change of angle can alter the distance to the subject enough to blur it.

To avoid this, I encouraged Neil to set his lens to manual focus (MF), to frame his shot, and then to move his lens's focus ring back and forth until the part of the image he wanted to focus on was sharp. This takes some practise – it helps to go back and forth a few times, to ensure you've got the focus point exactly where you want it – but once Neil had learned to relax his shoulders, his focusing was perfect (get more MF tips on page 61).

I also advised him to use narrower apertures to get more of his subject in focus, explaining that if you're inches away from your subject, your background will blur anyway.



Using autofocus, Neil's 5D selects the wrong focus point. Doing it manually allows him to pick out a specific ring on the snail's shell



PHOTO FIX #3

Keep your composure







By concentrating on the characteristics that make each flower unique, Neil has been able to isolate the sweeping curve of an arum lily and the umbrella-like shape of a giant cowslip to create two very graphic and striking shots

Once Neil had got the hang of focusing manually, I encouraged him to ditch his tripod for a while so that he could move and compose more freely. I then suggested cropping right in on his subjects, to really isolate colour and detail, and I urged him to think about what it was that made each subject unique: only by focusing on a plant's character – the sweep of a leaf, say, or the point of a petal – was he able to isolate that detail and create an image that was more of a portrait of the plant than a straightforward snapshot.

Did we fix Neil's pics? Turn over to see the results...

PHOTO FIX#2

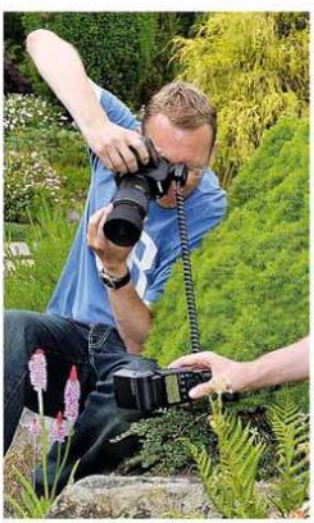
Lighting options explored

1 When photographing flowers in natural light, it's worth bearing in mind that direct sunlight tends to produce harsh, unflattering shadows. Most flowers are soft and delicate, so inevitably look best in soft, delicate light. Neil got lucky: on the day of our shoot the sky was slightly overcast, so even when the sun was directly overhead, the light wasn't too harsh.

2 A reflector, or even a sheet of white card, can be used as a secondary light source – either to throw light back into the shadows or to reflect light back towards the lens and provide a soft rim-light around the subject. It can also be used to block out direct sunlight to eliminate any harsh shadows if it isn't overcast.

3 Because its light comes from all directions, a macro ringflash also produces an even and flattering light, eliminating the harsh shadows that are characteristic of standard flash units. Macro ringflashes are also ideal for picking out reflective details, such as grains of pollen or raindrops.

4 An off-camera flash can be used to provide a subtle burst of side lighting (to model your subject), or back lighting (to provide a rim-light). They can also be used in conjunction with a ringflash to striking effect. By under-exposing a background and then lighting the subject with a burst of ringflash and a backlight, you can make it leap off a dark background and give it a bright halo at the same time.







Without additional lighting, this orchid primrose looks a bit flat, and the vertical composition doesn't help matters. By tilting his camera and adding a burst of off-camera flash, Neil has added some subtle side lighting that gives it a more three-dimensional feel



If you compare this winning shot of a cornflower with one of Neil's original macro images (right), the differences are dramatic. The crop is much tighter, the complementary colours are punchy and vibrant, and Neil's limited depth of field focuses attention on the tack-sharp stamens and petals, while keeping the background blurred

THE VERDICT

Practice will make perfect

The Photo Fixer says



"Neil has all the tools and skills to be able to take stunning flower photographs – he just needed to know how to apply them to a subject he was less familiar with. As a result he got the hang of manual focusing really quickly, and once he knew what to look for, his keen eye for composition really began to come into its own.

In addition, he soon realised that with macro photography depth of field is shallow even at narrow apertures, and as such was able to take more control of how much or how little of his subjects were in focus.

But it was in terms of lighting his subjects that Neil really blossomed. He made the most of the soft light, and used the coloured card and reflectors I lent him to great effect. He also got to grips with his ringflash for the first time. All he needs to do now is continue experimenting with different subjects and lighting effects."

Neil says



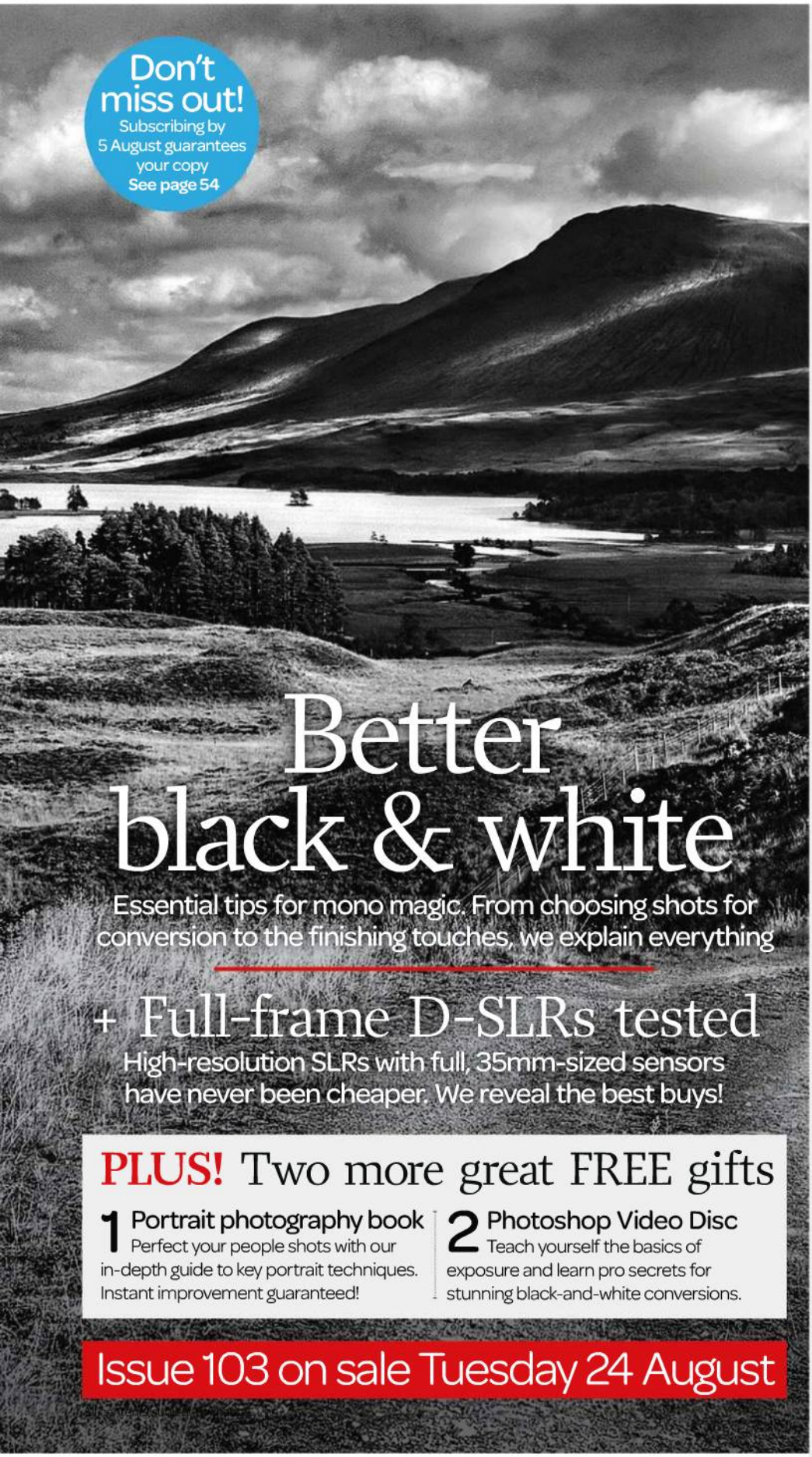
"I relied on autofocus so much that I hadn't even thought to select my focus point manually, let alone focus by eye. After a bit of practice I was surprised at how well manual focusing worked. Thanks to Paul's point about capturing the character of the subject, I now look at flowers and plants in a whole new light! I enjoyed the day so much I'm thinking of going back to Kilver Court to get the shots I missed."

With thanks to Kilver Court Gardens. Visit www.kilvercourt.com to find out more.

Do you need help?

How you can contact The Photo Fixer for assistance

Could your photography benefit from the help of an experienced expert? Is there an area of photography you'd like to know more about? If you think your technique could benefit from a day out with the *Digital Camera* experts, send us an email at **digitalcamera@futurenet.com**. Make sure you put 'Photo Fixer' in the subject line, and explain what your favourite photography subjects are, which area of your photography you'd like to improve and what camera kit and accessories you own.



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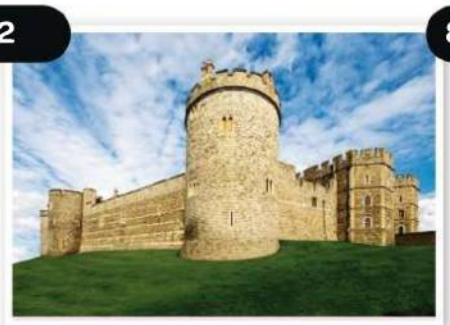
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THIS MONTH...

82 **Photoshop Basics**
Correct building distortion and remove ugly dark corners from your shots

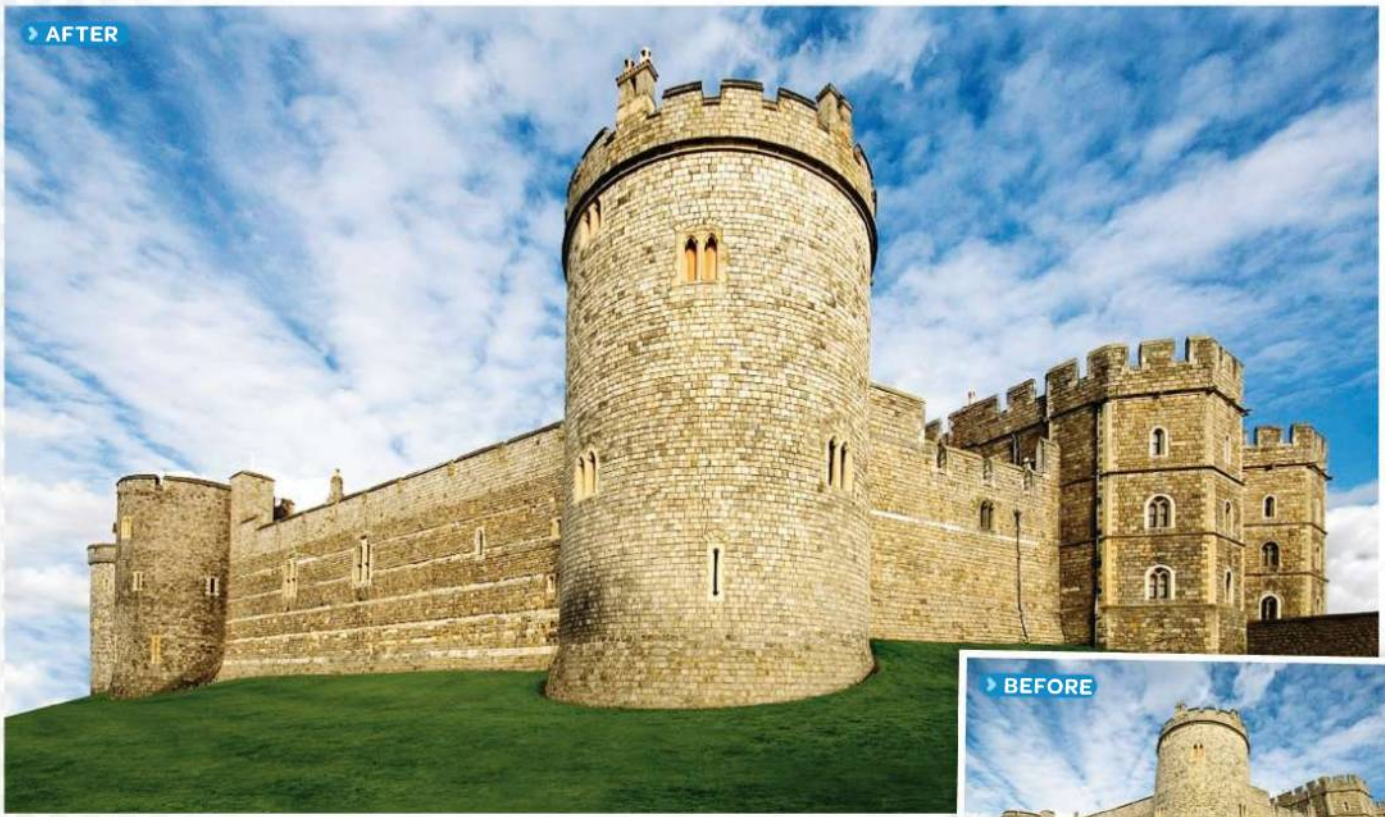
86 **Get the Look**
How to recreate the distinctive look of a pricey fish-eye lens

88 **Advanced Skills**
Improve depth of field in macro shots by learning how to focus stack









Ed Godden (Future)

WHAT YOU'LL NEED
Photoshop Elements 8 or Photoshop CS, or above

WHAT YOU'LL LEARN
How to correct converging verticals using Photoshop's Lens Correction command

IT ONLY TAKES 15 minutes

STEP BY STEP

Straighten up leaning buildings

Use the Lens Correction command to perfect your building shots. **George Cairns** reveals how

We take it for granted that most buildings have vertical walls that extend upwards at a 90° angle from the ground. However, in photos of a building, the walls often appear wider apart at the ground, but tilt inwards towards the top. These converging vertical lines are created by perspectival distortion.

As you get closer to a building, you'll need to tilt your camera at a steeper angle to get the top in shot. This will increase the perspectival distortion. Converging lines can also be exaggerated when you use a wide-angle lens to squeeze the sides of the building into the frame.

To avoid these converging vertical lines, you could try shooting your subject from a more distant vantage point, so you no longer need to tilt the camera upwards. This will help to make the building's walls run parallel with the edge of the frame. Alternatively, you could cough up the cash for a specialist tilt-shift lens that counteracts the converging verticals automatically.

DIGITAL DISTORTION

As you'll discover in this walkthrough, Photoshop provides several ways to straighten out converging verticals. Pixel-pushing tools such as the Perspective Transform command or the Lens Correction filter enable you to fix distortion, making walls run parallel with the edge of the frame. However, by distorting the shot you end up cropping too close to the edge of your subject and creating transparent areas around the edges.

Here, we'll show you how to replace tightly cropped or transparent areas using the Clone Stamp, so you can improve the shot's composition.

ZINIO FILES http://mos.futurenet.com/resources/dcm/DCM102_Converging_Verticals.zip



Duplicate the background

1 Open verticals_before.jpg from your CD. Open the Layers palette (Window>Layers). Duplicate the locked Background layer by dragging its thumbnail onto the Create A New Layer icon. This creates an editable layer called Background copy. Click the original Background layer's eye icon to hide it.



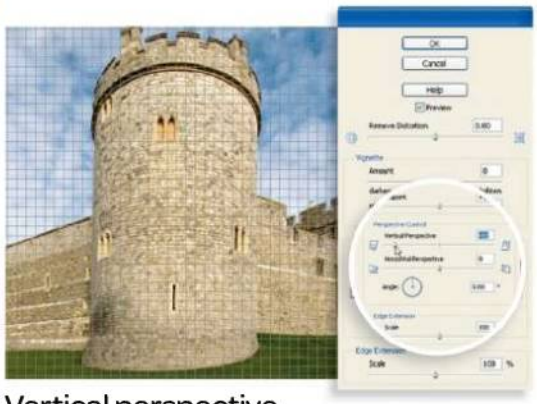
Get some perspective

2 One way to tackle converging verticals is to go to Image>Transform>Perspective. Drag the Transform box's bottom left selection handle inwards to distort the perspective of the shot. Although the walls are now vertical, the building looks too tall and thin. Press Escape to undo the transformation you've just made.



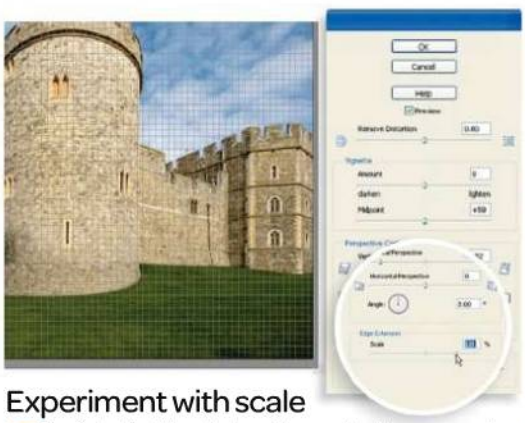
Try the alignment grid

3 Go to Filter>CorrectCameraDistortion. To ensure the corrected verticals run parallel with the edge of the frame, click the Show Grid box. You can see from the grey alignment grid that the castle's verticals converge more dramatically towards the edge of the frame, but less noticeably in the centre of the shot.



Vertical perspective

4 Go to the Perspective Control panel and drag the Vertical Perspective slider left to a value of -82. This distorts the shot in a similar way to the Perspective Transform command, but this time the building doesn't look too tall or thin. The vertical lines at the edge now run parallel with the vertical grid lines.



Experiment with scale

5 By distorting the shot you've created transparent edges at the bottom of the frame. If you move the Edge Extension Scale slider up to 128% you'll lose these transparent edges, but you'll also lose the top of the castle (and create blurry looking pixels). Set Scale back to 100%. Click OK to apply the filter.



Recrop the shot

6 The corrected shot has large transparent areas at the bottom and sides of the frame. You could try using the Crop tool to remove these transparent edges, but this would also chop off the sides of your castle, ruining the image's composition. Press Escape to cancel the crop.

Learn the lingo
The vanishing point

If you drive along a straight road you'll notice that it appears to taper inwards to a point in the distance. This is the vanishing point. If a building was tall enough, its vertical walls would appear to converge into a single point too. In reality, the walls at the top are the same distance apart, but perspectival distortion makes them appear to be closer together.

Digital Camera EXPERT TIP

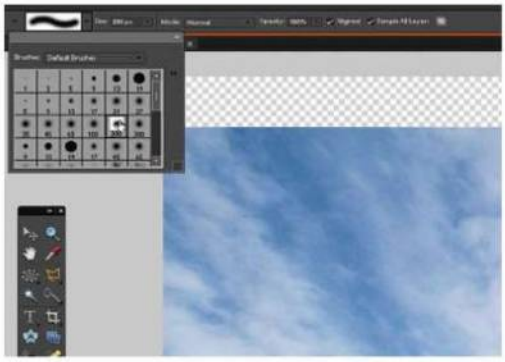
"Although a selection marquee can help protect parts of the shot from being cloned over, it can also obstruct your view. By pressing Ctrl+H you can hide the marquee but keep it active."

George Cairns, technique writer



Make a move

7 To improve the composition and preserve the shot's shape, grab the Move tool from the Tools palette. Drag the shot down so that the castle is positioned in the middle of the frame. This will reduce the transparent pixels at the bottom, but it will add an extra transparent bar at the top.



Grab the Clone Stamp

8 Click on the Create A New Layer icon at the bottom of the Layers palette. Grab the Clone Stamp tool from the Tools palette. Choose a soft round brush 200px in size. Tick Aligned and Sample All Layers. Hold down the Alt key and click to sample a patch of sky near the top left of the shot.



Clone in some sky

9 Hold down the mouse and spray right to clone sky and clouds over the transparent section at the top of the frame. Stop once you see bits of the chimney appear in the cloned area. Reduce the Clone Stamp's brush tip to 150px. Alt-click to sample some cloud and spray it over the unwanted chimney.



Little and often

10 For seamless results, feel free to sample little and often to patch clouds over the transparent area at the top. As you're cloning onto a separate layer, you can't spoil the original shot. Select the bottom right turret using the Rectangular Marquee tool, then Select>Inverse the selection.



Extend the wall

11 Spray clouds alongside the turret. This replaces the transparent pixels but leaves the turret untouched. Repeat for the opposite turret. Create a new transparent layer. Use the Polygonal Lasso tool to draw a marquee that extends the shape of the castle's wall. Set the Clone Stamp's Size to 45px.



Add more grass

12 Alt-click on the wall to sample. Click and spray to extend the brickwork. Deselect the marquee (Ctrl+D). Create another new layer (Layer 3); drag it below Layer 2. Draw a marquee to protect the turrets and sky at the left of the shot. Use the Clone Stamp to spray grass over the remaining transparent edges.

Did you know? Using Aligned

The Clone Stamp enables you to sample a patch of pixels, and then spray them over a new area. By ticking Aligned you force the sampling cross-hair to always remain the same distance from the brush tip. If you untick Aligned, then the sampling cross-hair will always jump back to the first area that you sampled.





Ali Jennings (Future)

Remove unwanted vignettes

Shooting with a wide-angle lens in bright sunlight? Lighten dark patches in the corners of your shot in Photoshop

Zooming out to get a wide-angle shot can cause darker patches to appear in the corners of your shot. This vignetting effect is a lens-related artefact. The centre of your lens tends to be the most effective part, while the edges may introduce vignetting or other artefacts such as barrelling (where verticals appear curved). Vignetting is not necessarily an undesirable effect, as the gentle change in tone can add texture to empty spaces and even frame your main subject with a delicate border. However, thanks to a slider in the Correct Camera Distortion command it's easy to remove. Follow the steps below to find out how.

WHAT YOU'LL NEED
Photoshop Elements 8 or Photoshop CS, or above

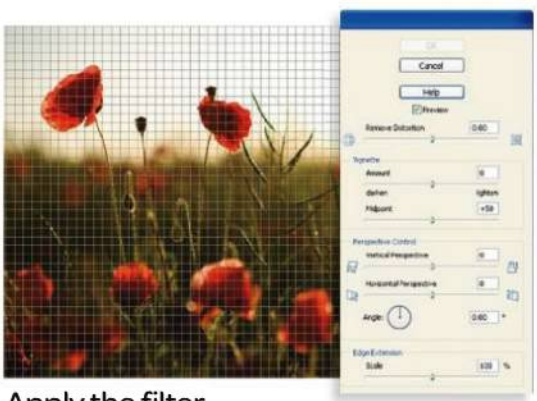
WHAT YOU'LL LEARN
How to remove vignetted corners using the Correct Camera Distortion filter

IT ONLY TAKES 5 minutes



Duplicate the background

1 Open vignette_before from your CD. Before you fix a shot, it's worth creating a duplicate. This enables you to quickly restart from scratch if things go wrong. Go to Window>Layers to open the Layers palette. Drag the locked Background layer's thumbnail onto the Create A New Layer icon to create a copy.



Apply the filter

2 Go to Filter>CorrectCameraDistortion (or Filter>Distort>LensCorrection in CS). You'll see a grey alignment grid overlaid on your shot. This can distract you and obscure the amount of corner vignetting, so untick the Show Grid box to remove it. You'll now be able to see the darkened corners.



Lighten the corners

3 To lighten the darkened (vignetted) corners, drag the Amount slider up to +41. This will also lighten up some correctly exposed sky areas. To limit the lightening effect to the corners, drag the Midpoint slider up to +76. This helps to preserve the gentle blue wash of colour in the sky. Click OK.



Before and after

4 You now have two layers. Background copy shows the fixed version of the shot. Click this layer's eye icon to turn it on and off. This enables you to compare the edited version with your original shot. If you're happy with the vignette correction, leave the layer visible and choose Layer>FlattenImage.

Learn the lingo
Vignetting

The corners of a wide-angle composition can often appear darker than the rest of the image. These darker corners are produced because an uneven amount of light has hit the camera's sensor during the exposure. This gradient of light-to-dark tone is caused when the light intensity falls off at the edge of the lens.

Did you know?
Lighten up

Photoshop CS and Photoshop Elements both deal with vignetting by lightening (or adding white) to the darker corners. The new Photoshop Lightroom 3 enables you to correct colour-related vignettes more effectively than its cousins, so there's no change in hue when the corners are lightened.

ZINIO FILES http://mos.futurenet.com/resources/dcm/DCM102_Vignette.zip





Ed Godden (Future)

WHAT YOU'LL NEED
Photoshop Elements 8 or Photoshop CS, or above

WHAT YOU'LL LEARN
How to use Photoshop's Spherize filter to mimic a fish-eye lens

IT ONLY TAKES 15 minutes

STEP BY STEP

Recreate a fish-eye effect

Ali Jennings shows you how to crop, distort and add text to get the look of an iconic album cover

MP3 music downloads might have lessened the pleasure of browsing album art, but the iconic covers that appeared on many records from the mid to late 60s are still revered today.

Some of the most memorable used original photographic techniques to produce eye-catching effects, such as long exposures or spot lighting, while others used specialist lenses to create psychedelic fish-eye distortion, as seen on The Rolling Stones' UK release of their 1966 compilation *Big Hits (High Tide and Green Grass)*.

The fish-eye lens used to shoot the cover dramatically increased the angle of view, the width and height of what was seen through the camera's viewfinder, ultimately meaning that more of the scene would fit into the frame. A side effect of this is the massive barrel distortion that spherizes the content and the large circular blackout around the edges of the image itself.

To create an image in this style you could use an expensive circular fish-eye lens, but an equally effective look can be achieved in Photoshop simply using the Spherize filter. We'll show you how...

ZINIO FILES http://mos.futurenet.com/resources/dcm/DCM102_Fish_eye.zip



Crop the image

1 Open fisheye_before.jpg. To ensure that after applying the fish-eye effect the main area of interest is centred, select the Crop tool and, holding down the Shift key, select a perfect square. To position the area of crop, click into the selection and use the arrow keys to move it into position.



Get the fish-eye look

2 Duplicate the Background layer (Layer>Duplicate Layer). Make sure that you have the duplicated layer selected and then go to Filter>Distort>Spherize. Use the slider to the right of the mesh preview to set Amount to 100%. Make sure the Mode drop-down menu is set to Normal and click OK.



Enlarge the canvas size

3 After applying the fish-eye effect you'll need to enlarge the canvas so you can add a realistic soft edge around the curvature of the distortion. Go to Image>ResizeCanvas>CanvasSize. Select Percentage and increase both values from 100% to 140%. Set the Canvas Extension Colour to black and click OK.



Select the border

4 Click and hold your left mouse button on the Marquee tool in the Tools palette. Select the Elliptical Marquee tool. Switch off the duplicate layer in the Layers palette using the eye icon and click the Marquee tool into the top-left corner of the image. Hold down Shift and drag it down to the bottom right.



Feather the edge

5 Inverse the selection by going to Select>Inverse, then enlarge the selection (Select>Modify>Expand) and set Expand By to 10. Go to Layer>New>Layer, then Select>RefineEdge. Increase Feather to 20px and click OK. From the Edit menu, select Fill, choose Black as the fill colour and click OK to apply.



Add some text

6 Select the Text tool and then click into the image where you want the band name to appear. Type in the name of the band and then use the cursor to select the text. Click onto the text options, set the font and size, and then click the green tick to confirm the change. Go to Layer>FlattenImage to finish.

Digital Camera EXPERT TIP

"This technique can quickly transform straight shots into quirky images with impact. When taking your own images of groups of people, make sure that you centre the main subject and leave plenty of space around the edges of the frame. This will minimise any odd facial distortions!"

Ali Jennings, digital editor

Did you know?
Full-frame fish-eye

You can also recreate the look of a full-frame fish-eye – where you get the distorted image, but without the black border. To do this, select an image with plenty of space around the edges, at least 25%. Then, once you've applied the effect, you can crop in, minimising the amount of the image that you will lose.



Ben Brain (Future)

STEP BY STEP

Get super-sharp macro shots

Ben Brain shows you how to improve the depth of field in your close-ups by 'focus stacking' in Photoshop CS4

Have you ever tried shooting close-up macro images? Then you'll know how frustrating it can be to deal with the exceptionally narrow depth of field (see page 74). Even at small apertures such as f/22, it's virtually impossible to get shots that appear sharp from front to back. But there is a way around this problem. Take multiple shots – each at different points of focus – and merge them together using imaging-editing software.

This clever technique is called focus stacking, and in a sense it does to shallow depth of field what HDR does to limited dynamic range. Like HDR, there are limitations, and focus stacking is dependent on your subject being static. Any movements between shots will ruin the results.

The cornflower we used here proved an ideal subject. After taking seven shots, each with a different point of focus, we merged them together in Photoshop CS4. If this process sounds complicated, don't panic. Thanks to its powerful features, Photoshop can do virtually all the hard work for you, and super-sharp macro shots are literally just a few clicks away.

ALTERNATIVE SOFTWARE

If you don't have Photoshop CS4 or above, there are alternative packages, such as Helicon Focus (www.heliconsoft.com), that can also focus-stack images. The results from these applications can be spectacular, but here we'll concentrate on creating the effect in Photoshop CS4.

WHAT YOU'LL NEED
Photoshop CS4 or above

WHAT YOU'LL LEARN
How to use Photoshop's Auto Blend Layers feature to create a focus stack effect

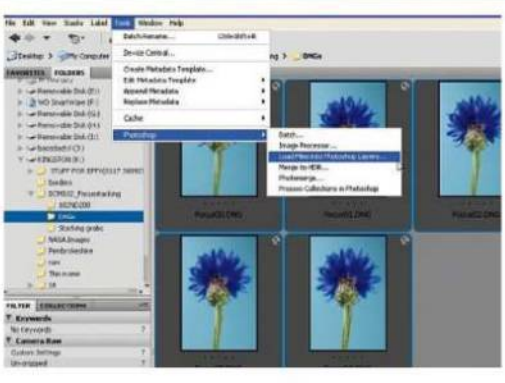
IT ONLY TAKES 15 minutes

HOW TO... Combine multiple exposures for maximum depth



Batch process the shots

1 Select the files named focus00.dng-focus06.dng from your disc and open them in Adobe Camera Raw (ACR). Click on Select All and tweak the Exposure to about -25. Now reduce the Temperature a little to accentuate the blue, boost the Contrast and increase the Vibrance. Save the images into a new folder.



Browse to your shots

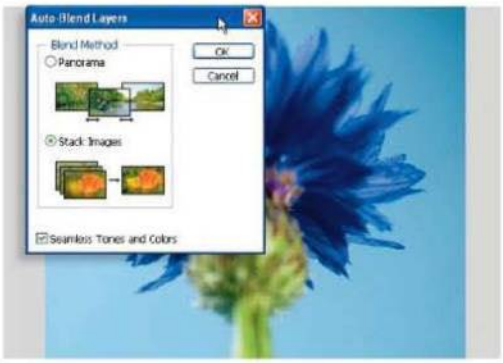
2 Using Adobe Bridge, browse to the newly created folder and select all of the tweaked images. Go to Tools>Photoshop>LoadFilesIntoPhotoshopLayers. This time-saving feature will import all seven images into one Photoshop document and open them in the Photoshop CS4 interface.

ZINIO FILES http://mos.futurenet.com/resources/dcm/DCM102_Focus_Stack.zip

Digital Camera EXPERT TIP

"Ensure the first image of your sequence is focused on the closest part of the subject you want to appear sharp and work your way back, changing the point of focus for each shot. A sturdy tripod is essential so that the composition remains the same throughout the sequence."

Ben Brain, deputy editor



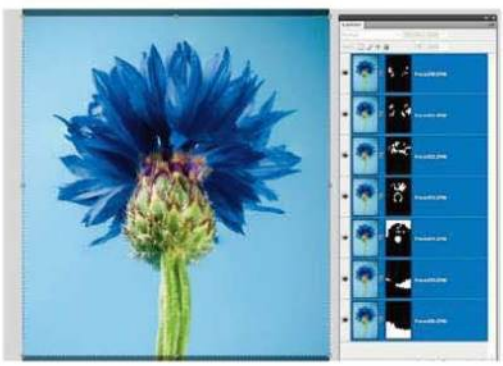
Merge your shots

3 It couldn't be easier to blend the in-focus parts of each shot. To start the automated process, simply go to Edit and then choose Auto Blend Layers. In the new window that appears, ensure you check the Stack Images and Seamless Tones and Colours boxes and then click OK.



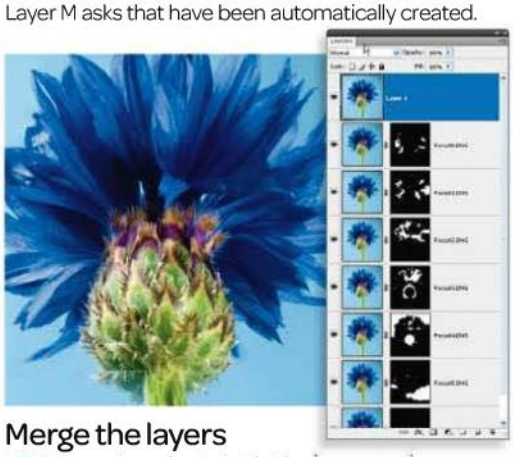
Let Photoshop take over

4 You can now sit back and relax while Photoshop does all the hard work for you. It will take the software a minute or two to blend all the layers, but it's a fairly complex procedure and it would take a lot longer to do it by hand. Take a look at the intricate Layer M asks that have been automatically created.



Crop your shot

5 For a slightly squarer and more contemporary composition, select the Crop tool from the Tools palette. Ensure that the crop is unrestricted by clicking the Clear button in the top options bar and mark out the crop area by clicking and dragging. Click the tick once you're happy with the new shape.



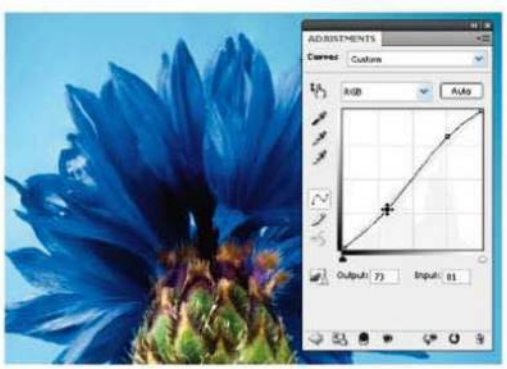
Merge the layers

6 Now we're going to 'style' the image to give it a professional finish. To do this, first merge all the visible layers in the Layers palette into one layer that sits at the top of the layer stack. Press Shift+Alt+Ctrl+E simultaneously to achieve this. This is a great keyboard shortcut.



Darken selectively

7 Select the Burn tool from the Tools palette and choose a large soft brush. In the top options bar, set the Range to Midtones and the Exposure to about 20% and gently darken the corners and edges. Reduce the brush size and selectively darken the central bud area just below the flower.



Boost the contrast

8 Go to Layer>NewAdjustmentLayer>Curves and boost the contrast a little by creating a gentle 'S' curve, as shown above. Create another Adjustment Layer, but this time choose Colour Balance. Add a little Cyan and Blue to further accentuate the colour of the cornflower.

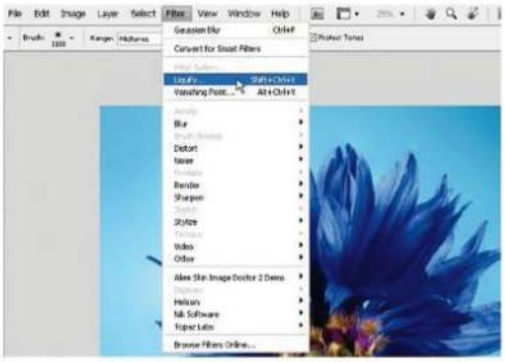
Did you know?
Colour theory

Successful flower shots are all about colour. Choose a background for your subject that shows it off to its best. Here we used a bluish piece of art card as our background and exploited the basic principles of colour theory. You don't always have to use complementary colours – sometimes, as here, a tertiary colour combination can be hugely effective.



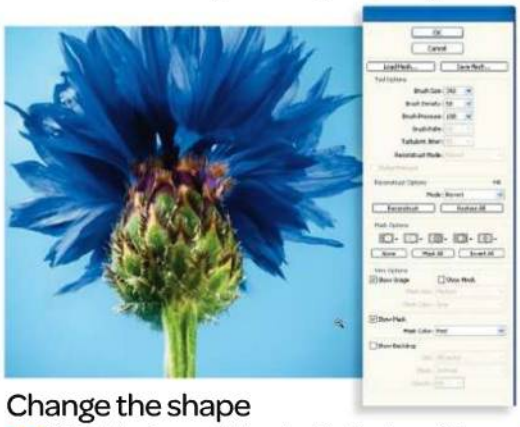
Make it glow

9 Merge all of the visible layers in the Layers palette again by following the instruction in step 6. In the new top layer, go to Filter>Blur>GaussianBlur and enter a Radius of about 60 pixels. Change the layer's Blending Mode to Soft Light and reduce the Opacity to about 15%. This will give the image a radiant glow.



Further adjustments

10 If you're a purist and don't like to take your Photoshop manipulations too far, you might want to leave this step out. However, we feel a slight 'slimming' of the flower's stem enhances the overall aesthetic of the shot. To do this for yourself, simply go to Filter>Liquify.



Change the shape

11 Select the Forward Warp tool (at the top of the left-hand Tools palette). In the right-hand Tool Options box, choose a Brush Size of about 450, a Density of 50 and a Pressure of 50. Use the Forward Warp tool to gently nudge the stem so that it looks thinner. Click OK when you're happy with the effect.



Sharpen your shot

12 To finish off, zoom into 100% so that you can see the detailed areas of the flower clearly. To sharpen your image, and ensure a quality print, go to Filter>Sharpen>UnsharpMask and enter an Amount of 50%, a Radius of 2.0 pixels and a Threshold of 2 levels. Save your sharpened image and you're done.

How we achieved maximum sharpness

The shoot

1 We photographed a single cornflower from a low angle. The depth of field even at a small aperture such as f/22 was so narrow that not all of the flower appeared to be sharp. So we made seven exposures, each with a different point of focus.

Layering up

2 Using Photoshop CS4 we created a single Photoshop document with the seven images imported as layers.

We then used the Auto Layer Blending feature to merge the sharpest bits of each shot together to make a super-crisp close-up with an increased depth of field.

The final polish

3 To finish off, we made a squarer crop, boosted tones and colours with Adjustment Layers, added a radiant glow and slimmed the stem using the Liquify filter. Finally, we applied some basic sharpening.



Did you know?
Seasonal blooms

Sometimes it's not always the flowers that are in full bloom that make the best photographic subject. This cornflower hadn't fully emerged when we took the shot, but it made a more interesting subject. Check out your local florist for seasonal offerings you could try shooting at home.



Digital Camera EXPERT TIP

"Keep your lighting simple. In this shot we used two angle-poise lamps with daylight bulbs fitted. They were positioned to reveal as much of the intricate detail as possible, which meant placing one in front, to the right and slightly above the flower, and the other to the left and slightly below."

Ben Brain, deputy editor

"I found the whole organisation of this event first class from the moment I arrived! Friendly, warm and attentive. Paul's knowledge of and love for animals shone through and his techniques were both thorough and inspirational."

Dawn Watts - How to Photograph Dogs

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THE PHOTO ADVISOR TEAM



Geoff Harris, editor
A decade testing cameras has taught Geoff what can go wrong – and how to fix it



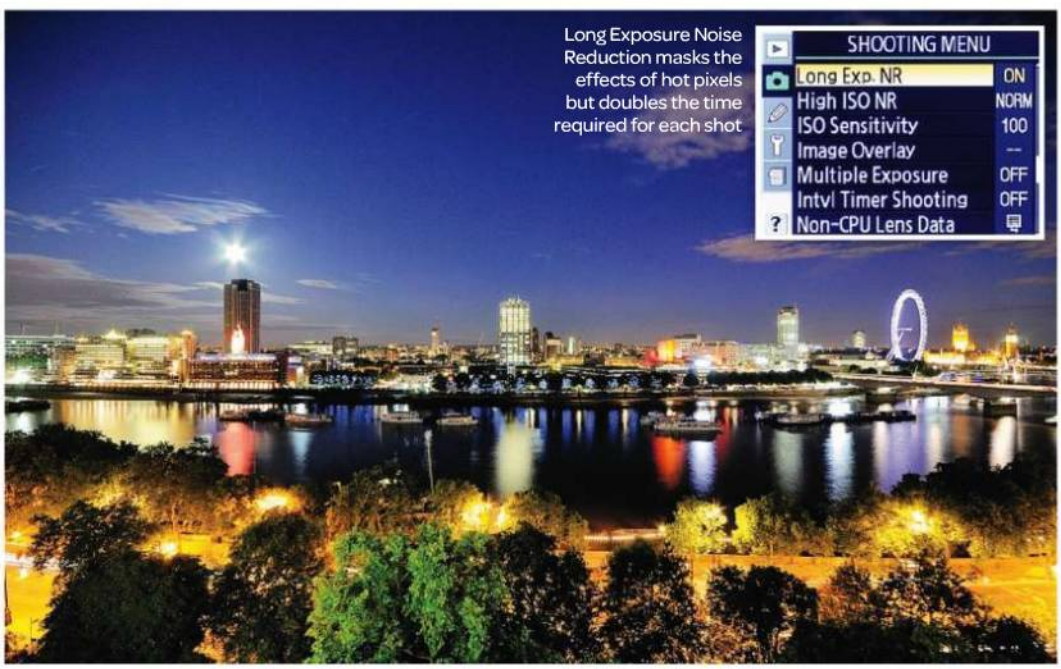
Ben Brain, deputy editor
RPS associate and former portrait pro Ben is an oracle of creative advice



Paul Grogan, technique ed
Paul's a travel and sports nut who joins us from our sister mag, *PhotoPlus*



Ali Jennings, digital editor
Ali's an expert on everything to do with Photoshop and photo editing



Long Exposure Noise Reduction masks the effects of hot pixels but doubles the time required for each shot

CAMERA SETTINGS

USING NOISE REDUCTION

Q My long exposures look grainy. I've seen a Long Exposure Noise Reduction setting on my camera, but it's switched off by default. Why is this? **Jamie Marks,** via email



Ben says Despite what you would expect from a noise reduction system, this one serves a different purpose that's specifically for long exposures, and won't reduce the grainy appearance of regular noise. The problem with long exposures of several seconds or more is that so-called hot pixels can randomly generate bright dots throughout the frame. Recent D-SLRs tend to suffer from the effect much less than older designs do, but it can still be a problem.

Long Exposure Noise Reduction works by taking a second exposure straight after the main exposure, but with the shutter closed. Often referred to as a dark frame, the whole picture should be black, so any hot pixels are immediately obvious and the camera's processing system can subtract them from the final image.

The drawback is that the time required to take each shot is doubled. For example, if you take a five-minute exposure, you'll have to wait ten minutes before you can take another. The camera's battery life, always at a premium for long-exposure shooting, is also halved. Most photographers therefore prefer to leave Long Exposure Noise Reduction switched off and remove any hot pixels at the editing stage.

CAMERA SKILLS

HOW TO USE HYPERFOCAL DISTANCE

Q I struggle to set appropriate autofocus points for landscapes. Somebody suggested that I focus manually and set the lens to the hyperfocal distance. How does this work? **Jane Stevens,** via email



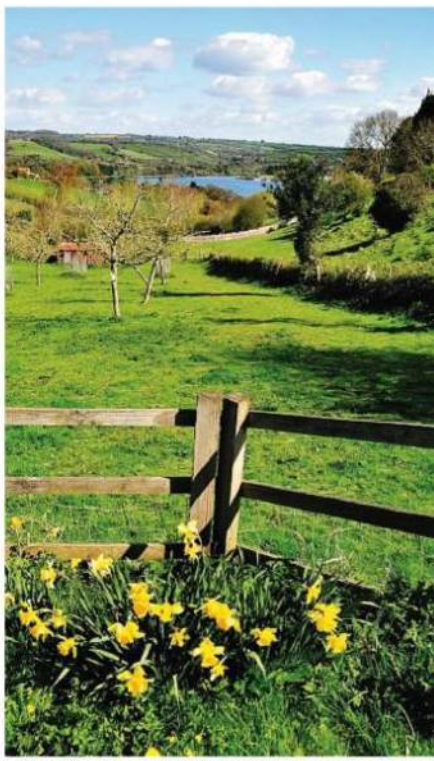
Paul says The depth of field, or in-focus distance in front of and behind the actual focus point, diminishes with longer focal lengths and larger apertures. So to keep both foreground and background areas in focus, it's best to stick to wide-angle zoom settings and small apertures, such as f/22.

Similarly, hyperfocal distance varies with focal length and aperture. Nevertheless, it enables you to set a focus distance that keeps everything sharp between the closest possible place and infinity. To make use of hyperfocal distance, you need a lens with a distance scale. Switch to Manual and set the focus distance depending on the zoom and aperture settings (see the chart on the right). Everything from half the focus distance to infinity will be sharp.

For example, when shooting on a camera with a 1.5x crop factor at an 18mm focal length and aperture of f/16, set the focus to a hyperfocal distance of 1m. The depth of field will extend from 50cm to infinity.

HYPERFOCALS FOR AN APS-C WITH A 1.5X CROP FACTOR

Focal distance	Aperture	Hyperfocal distance
18mm	f/8	2.04m
	f/11	1.45m
	f/16	1.03m
	f/22	0.73m
28mm	f/8	4.93m
	f/11	3.49m
	f/16	2.48m
	f/22	1.76m
35mm	f/8	7.69m
	f/11	5.45m
	f/16	3.86m
	f/22	2.74m
50mm	f/8	15.7m
	f/11	11.1m
	f/16	7.86m
	f/22	5.57m



Set the hyperfocal distance manually on your lens to keep as much of a scene as possible in sharp focus

A LAYMAN'S GUIDE TO...

RINGFLASH

What is a ringflash?
Unlike a regular flashgun, a ringflash has a circular light source that sits around the circumference of the lens's front element. This connects to the main control unit via an electronic cable, and the main control unit then slots into the camera's hotshoe.

How do ringflashes work?
Dedicated ringflashes enable through-the-lens flash metering, ensuring the required level of flash power for effective illumination of subjects at varying distances.

Who makes them?
Most camera manufacturers make ringflashes, but they are often very expensive – for example, the Canon MR-14EX costs £465, and the Olympus FS-SRF11 is priced at £610. Good third-party equivalents, such as the Marumi DRF14C, can work out much cheaper, usually costing about £120.



When should I use a ringflash?
They're ideal for macro or close-up work, as well as medical and scientific photography in which you need even, shadow-free illumination of subjects. Ringflashes are also popular for photographing jewellery.

How do I attach one to my D-SLR?
The lamp section of a ringflash system usually attaches to a lens's filter thread, although some models fit to the bayonet mount on the front of the lens. This is usually used for attaching the lens hood.



Dark shadows in macro shots are common with flash



Wraparound light from a ringflash eliminates shadows



Slow shutter speeds are essential for creating a sense of speed



A fast shutter speed makes the car look look like it's parked

Digital Camera EXPERT TIP

"For smooth panning, and the best quality horizontal motion blur, mount your camera on a monopod"

Ali Jennings, digital editor

CAMERA SKILLS

HOW TO CREATE MOTION BLUR

Q I've been trying to get motor racing shots with my D-SLR and telephoto zoom but I'm struggling with shutter speeds. Either the backgrounds are sharp and the cars look like they're still, or everything's blurred. Can you help? **Karl Biggs,** via email

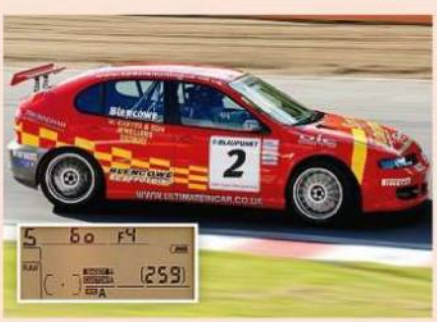


Ali says To create a sense of speed and movement, you'll need to use relatively slow shutter speeds of about 1/60 to 1/90 seconds. Meanwhile, keeping the cars sharp while blurring the background requires good panning technique. To do this, spread your feet fairly wide apart, standing at right angles to the point you want to shoot. Then swivel your hips, rather than your shoulders, following the car as it moves and carry on panning for as long as possible, even after releasing the shutter.

Another neat trick is to set your drive mode to Continuous and fire a burst of shots so you stand more chance of getting one or two sharp images from a sequence. Even with the best technique and plenty of practice, the majority of panned shots using slow shutter speeds are likely to be unusable, so stock up on memory cards and shoot as many pictures as you can to be sure of some keepers.

How to... CREATE A SENSE OF SPEED

Optimise your camera settings for panning shots of fast-action sports



1 Use Shutter Priority

Switch to Shutter Priority mode and dial in a shutter speed of about 1/60 sec, checking that the aperture is within range of the lens. You may need a Neutral Density filter if the sun is very bright.



2 Image stabilisation helps

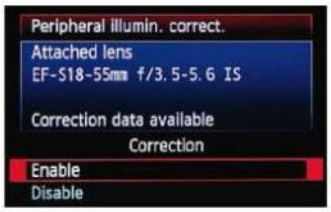
Many lenses feature manually selectable or automatically detected panning modes. Image stabilisation technology applies anti-shake in the opposite plane to the direction of your movement.



3 Pre-focus

Continuous autofocus will often be too slow to track fast-moving targets coming towards you. Switch to single focus and pre-focus on the piece of track into which the cars are moving.

SPEEDY SOLUTIONS



REDUCE VIGNETTING

Q I've noticed that some of my shots have darkened corners but others seem absolutely fine. What's causing this and how can I stop it?
Ellie Mears, via email



Geoff says Zoom lenses are more notorious for vignetting than prime lenses, especially at their widest-angle settings and maximum apertures. Because of this characteristic, it's best to avoid using both simultaneously. Some of the most recent D-SLRs also have a built-in peripheral illumination correction feature for reducing vignetting.



FORMATTING MEMORY CARDS

Q I normally reformat memory cards on my computer after I've downloaded my images, but I've just noticed in my camera's handbook that I should do this in-camera. Does it make a difference?
Max Buckhannon, via email



Ali says It's always better to format your cards in-camera because it eliminates the risk of any hidden or system files and folders being written to the memory card, which may cause problems later on. If your camera features a low-level format option, it's a good idea to use it if you've already used the memory card in a different model of camera.

RATE MY PHOTO

Red Bull Biker

By Martyn Boston

Nikon D3/ Nikon AF-S 70-200mm f/2.8G ED-IF VR II lens/1/3200 sec at f/7, ISO640

BEFORE
This is a really exciting action shot, despite the slightly dull sky. A wider frame would have given even more sense of scale



What you told us



Martyn says To get this shot of a Red Bull X-Fighters stunt man in mid-air, I set my camera to Aperture Priority – I thought it would cope best with the changing light. I used positive compensation to get the biker's exposure right, but that blew out the bland sky.

I tried to correct the shot in Photoshop, but my efforts with the Shadows/Highlights tool caused halos on the back wheel. I made further, more subtle adjustments but the image just didn't seem to pop. How would you go about making it better?

Our experts say



Paul says Sometimes, it's just not possible to correctly expose for a dark subject and a bright background in the same shot. Here, the rider is well exposed, but the histogram reveals that the highlights in the sky are slightly clipped. The beauty of RAW is that the detail in these areas can be teased out by tweaking a few sliders.



Geoff says Well done for capturing such an exciting moment! For me, the crop is a little too tight – a bit more space around the rider would have added more drama – though I understand the urge to zoom in. I agree, the sky is bland, but you can't have everything, and as an action shot, this works. You were right to expose for the rider.

Digital Camera verdict

- The bike is well exposed, with plenty of detail in the chrome
- The composition's tight, with space for the rider to move to
- Shooting from down low has added to the sense of height
- The sky's slightly blown out, but this is easily fixed in ACR

Get critiqued!
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AFTER
There's a lot of action going on here already, but try boosting contrast to make the rider seem even more dynamic

How to... REVEAL DETAIL IN SHADOWS AND HIGHLIGHTS

Tweaking a few sliders in Adobe Camera Raw (ACR) can transform high-contrast images



1 Assess the exposure

In Adobe Camera Raw, click on the triangles at the top left and right of the histogram to turn on the shadow and highlight clipping warnings. Blown highlights will show up as red patches, while black shadows will show up as blue marks.



2 Reveal detail

To make a bright sky more moody, drag the Recovery slider to the right – in this case, all the way up to 100. To bring out detail in the bike, drag Fill Light to 15. And to make the shot more punchy, deepen the shadows by dragging Blacks to 10.



3 Boost contrast and colour

Dragging Clarity to about 40 will help the biker leap off the page by boosting local contrast, making edge detail crisp and sharp. Drag Vibrance to 40 to boost the saturation of the blue sky without making the bike's mudguards look garish.

Digital Camera EXPERT TIP

"To really accentuate rich blues in seascapes or sunny skies, switch to the Landscape colour mode if your camera has one. This has the effect of boosting both blues and greens in the colour range"

Geoff Harris, editor

CAMERA SETTINGS

IS WHITE BALANCE GIVING YOU THE BLUES?

Q On a recent trip to the coast, the rich blues of the sea and sky looked amazing, but my D-SLR didn't capture them, producing more greenish hues. Why was this? **John Carnes,** via email



Paul says Large expanses of bright colour can play havoc with a camera's Auto White Balance settings. As well as incorrect colour balance, deeply saturated colours can often be dumbed down, losing vibrancy and saturation.

The easiest solution is to switch to Manual White Balance mode and select the option that's the best fit for the prevailing weather conditions – for example, Daylight (sunny), Cloudy or Shade. Auto White Balance can also drain the colour out of a sunrise or sunset. In these cases, Cloudy or Shade modes usually work well. For ultimate flexibility, shoot in RAW mode and adjust the white balance at the editing stage.





Use a White Balance preset for consistent images and better colour rendition

CAMERA SETTINGS

METERING MODES

Q The Evaluative metering mode on my D-SLR seems to have a habit of giving me over-exposed pictures. Is it better to use one of the alternative options?

Shane Cummins, via email



Ben says The Evaluative metering mode should work fairly well in most situations. But if you're consistently getting pictures that are too bright, it's worth dialling in a little negative exposure compensation. Some cameras enable you to set this as a default value.

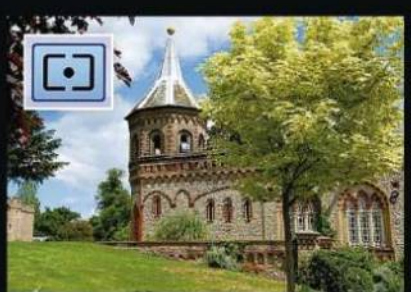
For high-contrast scenes where you want to set the correct exposure for shadowy areas and let the highlights wash out, or retain highlights and submerge shadows into darkness, it pays to be more selective with metering, using the Partial, Spot or Centre-weighted options...



1 Evaluative metering
A good catch-all, this takes the whole scene into account, but often works best if you apply additional exposure compensation.



2 Partial metering
Particularly useful in backlit situations, this mode disregards everything except for a small circle in the centre of the frame.



3 Spot metering
Spot metering is the most accurate mode, but it can be the trickiest to use. Green grass is usually good as an outdoor target.



4 Centre-weighted metering
Like the Evaluative metering mode, this option uses the whole scene, but the exposure is weighted to light values in the centre.



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CAMERA SKILLS

GET CONTROL OVER FILL FLASH

Q I've tried using fill flash outdoors to minimise dark shadows, but it's often too strong or weak and the backgrounds look artificially bright or dull. How can I get more consistent results? **Zoe Williams,** via email



Ali says The first step is to get an understanding of how your camera and flashgun work together in dedicated flash modes. For example, Nikon models generally do a good job in Programmed Auto mode, when the flashgun's switched to its Balanced Light setting. With Canon D-SLRs, you're better off switching to the Av (Aperture Priority) shooting mode to ensure the best possible balance between flash and ambient lighting.



Switch to Manual for the greatest control over flash power

A common problem is that the flash is too bright when portrait subjects are off-centre, because through-the-lens flash metering is based on the central region of the image. To avoid this hurdle, zoom in to fill as much of the central area as possible with the subject's face. Then press the Flash Exposure Lock button before recomposing for the final shot.

To fine-tune the balance between flash and ambient lighting, apply regular exposure compensation to lighten or darken the background, and flash exposure compensation to adjust the brightness of the foreground subject. For complete control, switch to Manual shooting mode and set the aperture and shutter speed for the background – don't exceed the maximum flash sync speed (often about 1/200 seconds). Switch flash metering to Manual, and adjust the power for perfect results.

ASK PhotoRadar.com

A HAIRY COO

By Paulmalsop (Paul Alsop)

Canon EOS 5D Mark II/ Canon EF 24-105mm f/4L IS lens/ 1/250 sec at f/5.7, ISO100

PHOTO FEEDBACK from our online community





Paul says I had to get right down in the dirt to get this shot. I noticed this little guy was young and remarkably inquisitive, so I decided to play on that characteristic, gently getting below him so that I could shoot from an unusual perspective.

PHOTORADAR USERS SAY:

PhotoRadar says You have got to admire photographers who are prepared to go just that little bit further to get a shot. The treatment gives it a lomography feel, too.

F/11 says This is my kind of image, filled with lots of humour and emotion. Well done you. However, I wouldn't recommend getting underneath any cow for love nor money.

n-hatton says Great take on these wonderful and gentle animals! Love the hair colour you've captured, and the clean background. The vignette works well too.

Martin-H-Yeah says This is a cool shot. I love the funky angle of view. You get the feeling that you're kind of small and being looked down on.

Ali Jennings says What a great picture! The cow's humorous expression absolutely makes this shot. I also have to comment on the choice of process – the altered colour and vignette really help with adding that all-important impact.

Want one of your pictures to be featured here? We scour the PhotoRadar galleries for amazing shots, so upload your photos today!

PhotoRadar The home of digital photography

SPEEDY SOLUTIONS



LIVE VIEW FOCUSING

Q I find it difficult to apply accurate manual focusing using the viewfinder on my D-SLR. I've been told that using the Live View mode can make things easier. Is this true?
Jim Parker, via email

Geoff says Live View really comes into its own for critical manual-focusing situations, such as macro shooting when the camera is mounted on a tripod. This is because you can usually apply x5 or x10 magnification for an ultra-detailed view on the camera's rear LCD screen, making manual focusing a breeze.



MICRO FOUR THIRDS

Q What's the difference between the Four Thirds and Micro Four Thirds camera systems? Are lenses compatible between the two?
Pete Hughes, via email

Ben says Unlike most D-SLRs, Four Thirds cameras use a four-thirds aspect ratio and a large crop factor of 2.0-1.5x – 1.6x is the norm. This is also true of Micro Four Thirds cameras, but those are more compact because they don't have an optical viewfinder or mirror assembly. They require Micro Four Thirds lenses, but you can also fit regular Four Thirds lenses via an adaptor.

RATE MY PHOTO PRO

Ready to Jump?

By Frédéric Thomas

Nikon D300/ Nikon 200-400mm f/4G VR lens/1/200 sec at f/4, ISO800



Get critiqued! Email photos to digitalcamera@futurenet.com with the subject 'Rate My Photo Pro'



Frédéric says I'm a reader of *Digital Camera World* in the US and would like some professional feedback on this image. So far, it's what I consider to be one of the best images I've produced, but I'm sure that six or 12 months from now I'll find it average, if not worse – that's the way it is!

Others have said they find the shallow depth of field distracting, but I think it's an integral part of the picture because it draws attention towards the sharp areas. What do you think?



Nigel Blake, pro nature photographer, says Squirrels are very photogenic creatures. They're often tame and will come to food in parks, so are relatively easy to photograph.

> "This works very well because there's lots of room for the animal to move into"

This composition works very well because there's lots of room for the animal to move into. I think it would be even better if the subject was slightly smaller in the frame, with more of the park seat visible, illustrating the relationship between wildlife and man.

The shallow depth of field successfully draws the viewer's attention to a specific area of the image, but it needs to have more action in the point of focus. If only this squirrel was eating something! However, you've captured a good expression and a glint that really brings the eye to life.

The levels are a bit off, with no black or white points set. This has resulted in an orangey overall colour cast, but that would be easy to correct in Photoshop. There's also some contrast and colour noise in the image, but at ISO800 that's to be expected. Noise reduction software would make light work of sorting it out.

Digital Camera verdict

- Composition is very good – the subject isn't too central
- Good focusing gives great eye contact with the viewer
- Try to include more background to convey a story
- Practise using Levels for a better overall look

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THE WILDLIFE ENTHUSIAST



Name: Graham Embley
Age: 62
Location: Weymouth
Budget: £2,000
Wants: To upgrade his Canon EOS 400D to a mid-range D-SLR and lens that he can use to photograph woodland wildlife.

WE RECOMMEND:



CANON EOS 7D, £1,239
The 7D's focus system is one of the fastest on the market. Offers an 8fps burst mode and superb performance at high ISOs. The perfect wildlife camera.
www.canon.co.uk



SIGMA 120-400MM F/4.5-5.6 DG OS HSM, £599
With the 7D's 1.6x crop factor this lens gives an equivalent focal length of 640mm, so you can keep your distance and still get frame-filling images.
www.sigma-imaging-uk.com



JESSOPS 2X CONVERTER, £79
This 2x converter doubles a lens's focal length. In the case of the Sigma 120-400mm this equates to a staggering 1,280mm, so you won't startle shyer wildlife.
www.jessops.com



MANFROTTO 679 MONOPOD, £39
At longer focal lengths it's hard to keep lenses steady enough to capture sharp shots; this simple but sturdy monopod will give you the extra stability you need.
www.manfrottodistribution.co.uk

YOUR VERDICT:



Graham says: I'm looking forward to buying and trying this kit. With a bit of practice I'm sure it'll make a huge difference to my shots.

THE PORTRAIT NOVICE



Name: John Jacobs
Age: 35
Location: Derby
Budget: £850
Wants: A lens and flashgun for his Canon EOS 40D that is suitable for capturing creative portraits and group shots at family gatherings.

WE RECOMMEND:



SIGMA 50MM F/1.4 EX DG HSM, £350
This is an excellent standard lens that's ideally suited to photographing groups. It offers good sharpness throughout the frame and minimal edge distortion.
www.sigma-imaging-uk.com



METZ 58 AF-1 DIGITAL FLASHGUN, £269
If you need a little extra light to illuminate a group, you'll need a powerful flash: the Metz 58 doesn't hold back on features or power.
www.intro2020.co.uk



SECULINE TWIN LINK T2D, £119.99
An easy way to get creative with lighting is to use a wireless flash system. Seculine's T2D gives the freedom to set up multiple off-camera flashes for pro effects.
www.intro2020.co.uk



LASTOLITE LUMEN8 LIGHT STAND, £35
When using a flash wirelessly, you need a way to hold it in place. Affordable and light, this stand helps you position your flash just where you want it.
www.lastolite.com

YOUR VERDICT:



John says: It's my parents' 40th wedding anniversary next year, so that gives me plenty of time to hone my skills with this new kit!

THE STILL-LIFE SHOOTER



Name: Dan Blake
Age: 37
Location: Padstow
Budget: £550
Wants: To improve his still-life photography and use image-editing software to process his own pictures effectively.

WE RECOMMEND:



GIOTTOS 9351B PRO TRIPOD WITH MH5011 HEAD, £119
A good balance between portability and stability. The MH5011 three-way head features a quick-release system and four spirit levels.
www.giottos-tripods.co.uk



PHOTOSHOP LIGHTROOM 3, £232.65
This latest version of Lightroom enables tethered shooting so that you can fire the shutter and view the images on your computer screen.
www.adobe.co.uk



INTERFIT 3200K 2 HEAD KIT, £199
Great for still-life shoots, this kit includes two heads, two stands, two leads and two brollies (one reflective, one translucent) to reflect or soften the light.
www.jessops.com



HELPING HANDS, £9.99
Flowers and plants make great still-life subjects, but keeping them in position can be tricky. This device enables you to grip and twist your subjects perfectly.
www.maplin.co.uk

YOUR VERDICT:



Dan says: This kit comes in slightly over budget, but I'm sure the investment will be worthwhile. I can't wait to try tethered shooting.

Philip Lee Harvey

Travel photography's no holiday, but it can be hugely rewarding, as this top UK pro reveals to **Geoff Harris**

Travel photography – what's not to like? You get paid to jet off to exotic locations and take photos all day, without the distractions of partners and kids. To tie in with our special travel photography supplement this issue we're talking to one of the UK's leading travel/location photographers, Philip Lee Harvey.

Lee Harvey's shot everything from Haitian voodoo ceremonies to the world's best beaches, and his images regularly appear on the pages of top travel magazines. His photographs manage to be polished and beautifully composed while still packing emotional impact. He's constantly thinking about how best to use light, something which makes his work really stand out.

"I'll scout a location to get the look I want, and I'll know exactly what tree the sun rises behind," he says. "You have to work the light all the time and not be afraid to experiment – you don't always have to



Bayon Temple
Angkor, Cambodia
Lee Harvey shoots directly into sunlight to give the image a unique atmosphere and timeless quality evocative of old travel prints

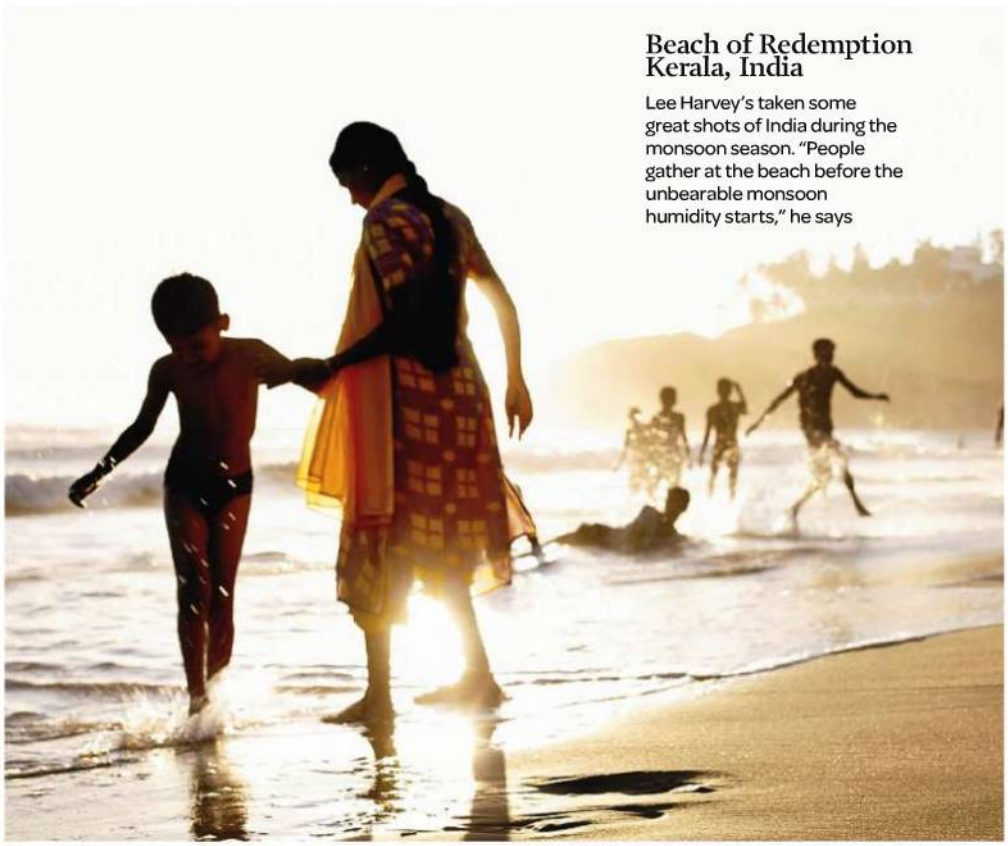
PROfile

* Born in Canterbury in 1969, Lee Harvey has been a travel photographer for 18 years.
* A frequent contributor to *Lonely Planet* magazine and *Condé Nast Traveller*, he's also done advertising work for Shell, T-Mobile and Ford.
* Awards include plaudits from the Royal Photographic Society and Association of Photographers.

All images: Philip Lee Harvey







Beach of Redemption Kerala, India

Lee Harvey's taken some great shots of India during the monsoon season. "People gather at the beach before the unbearable monsoon humidity starts," he says

Kenyan Village *(top)*

While Lee Harvey works well in strong sunlight, he makes the most of dawn and dusk for striking shots, as in this beautifully composed image

Djenné Mosque, Mali *(above)*

Lee Harvey will use all manner of effects to add atmosphere. "Don't go out at the same time as all the other tourists. You'll get very harsh, contrasty shots"

IN THE BAG



"My main camera is a Canon EOS 5D Mark II," says Lee Harvey. "It's great for the money, and I love the HD video recording. I use lenses from 17-300mm, or 400-600mm for wildlife. I also use an H2 Hasselblad medium format camera with Phase One digital back, two laptops, Manfrotto tripods and LaCie back-up devices."

keep the light behind you, you can shoot into the sun, use dusk, smoke – anything to add atmosphere. But don't just shoot in the middle of the day all the time, like a tourist."

THINK GRAPHICALLY

So how did Lee Harvey get started in this fiercely competitive genre? "I had been a keen photographer since I was 12 or 13, but decided to study graphic design at college rather than photography," he reveals. "Photography degrees weren't as good as they are now, and I'm glad I did graphic design – it gave me a real understanding of how to shoot images for magazine spreads and adverts, which is a big advantage when you're trying to sell work. I like to shoot very graphic compositions anyway."

After graduation Lee Harvey worked as an assistant for advertising photographers. "But I was ambitious to become a travel, or as I prefer to say, a location photographer, as it brought all my interests together – travel, exploration and history. So every bread-and-butter photography job I got, I used the money I earned to fund my travels."

He kept working and eventually started to get commissions from travel magazines and advertising clients. "I was lucky enough to win an award from the Association of Photographers, and on the back of this I got an agent, which again led to more ad work."

Much of his success is clearly down to stubborn determination: anyone who thinks they can break into travel photography just by flogging a few holiday shots is clearly a frequent visitor to La-La Land. "I had to learn how to be an all-rounder, and go anywhere," he explains. "Also I had to learn to work in all environments. So I'd go on self-funded trips to the desert or take all my equipment into an Asda cold store so I got used to real cold."

WORK THE SCENE

A big problem for any aspiring travel photographer is making their shots stand out: with travel cheaper than it's ever been, getting shots of South America or South

"I'm glad I did graphic design – it gave me a real understanding of how to shoot images for magazine spreads and adverts, which is a big advantage when you're trying to sell work"



Hamer Tribeswoman Omo Valley, Ethiopia
Comfortable with fashion and advertising techniques, Lee Harvey can draw upon a variety of approaches for his striking portraits

BEHIND THE IMAGE



"FOR THIS SHOT OF A MASAI BRIDE I SHOT INTO THE LIGHT, EXPOSING FOR SHADOW DETAIL – A CLASSIC FASHION PHOTOGRAPHY TECHNIQUE"
Philip Lee Harvey

"I took this while covering a Kenyan safari for *Lonely Planet* magazine. We got to the Masai tribe's village – they're very friendly and photogenic – and by chance, this girl's wedding was about to get underway."

Lighting

"This shot's a great example of why you should never let the evening or morning light pass you by. The image wouldn't have worked half as well if I'd shot her in harsh, contrasty midday sun. I always shoot in the available light rather than using flash."

Lenses

"You have to be careful when shooting into the light, as the flare effects can be really good or really awful. You need to get the angle right and understand how the scene will relate to a digital file. Using a quality coated lens really makes a difference in this situation."

Composition

"The bride was lost in her own world, so didn't pose for me, which would have spoiled the shot. I was really happy to just capture her reflective mood before the wedding started. There's a lovely sharp fly in the image too!"



Falukas on the Nile Egypt
(below, top right)
Lee Harvey does a lot of work for tourist bodies as well as travel magazines and stock libraries; this serene image of traditional boats was taken for an advertising campaign for the Egyptian tourist board

Sacred Waterfall Kerala, India
(below, bottom right)
"This looks like the women were shot in snow, but it was actually taken in a sacred waterfall," says Lee Harvey. Note the masterful control of shutter speed

Hamer Girl Omo Valley, Ethiopia
(below main)
Another soulful portrait that reveals how Lee Harvey's skills in advertising and portraiture have stood him in good stead on his photographic travels

East Asia is no longer a big deal. So what's Lee Harvey's secret for distinctive shots?

"If I'm going to a commonly shot location, I'll scout it out," he says. "I'll see what other photographers (and the locals) have shot as a point of reference. I always get a local guide, show them shots that have caught my eye and get their advice on where to go next, or how to get something a bit different. You have to stay in control, too. If a place isn't working you have to have the confidence to get everybody up in the middle of the night and drive to the other side of the country."

LEARN TO EXPERIMENT

Lee Harvey also makes the interesting point that to avoid the obvious shots, sometimes you have to do them first, to give clients a safety net – then you can afford to experiment. "You have to learn to really work a scene, and don't forget to look behind you," he adds. "One of my most successful shots from Angkor Wat in Cambodia wasn't of the temple but of some rice fields nearby."

> "You have to stay in control. If a place isn't working you have to have the confidence to get everybody up in the middle of the night and drive to the other side of the country"

Lee Harvey mentioned earlier his obsession with light and it's not just about working at the right time. "I'll use lighting techniques from advertising, portrait, fashion, even food photography to make my shots look distinctive," he says. "If you're experimenting with light, you really have to take control of your camera's settings. You can't rely on the metering to get the light right all the time, it simply won't."

Lee Harvey's approach certainly makes sense; rather than fretting about shooting places that have been photographed innumerable times before, he's more concerned about working the scene and maximising the light to make his images stand out. "Try going to a place at the 'wrong' time," he advises. "India at monsoon season, for example. This yielded some great shots for me. Guides can often get you into places earlier, too, before they open to the public, and this is another big help."

Earlier, Lee Harvey mentioned his youthful fascination with explorers, and Victorian explorer-painters such as John Frederick Lewis and David Roberts have exerted a big influence. "Anyone serious about travel photography should study painters, as often these were the first people to record foreign places – the 19th-century Orientalists, for example. I'm always going to galleries and exhibitions for inspiration."







PRO INSIGHT

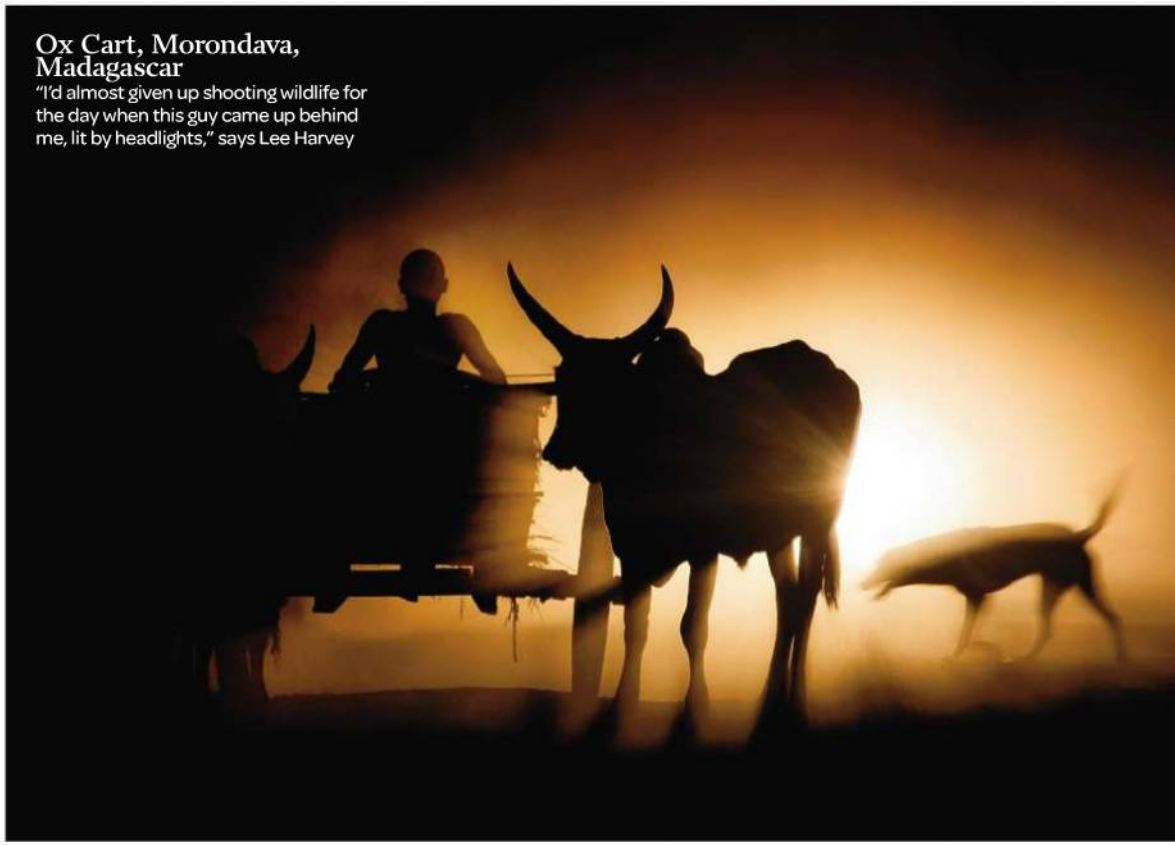
Lee Harvey shares his tips for winning shots

1 Research the best time of day to work. Either get up early or wait until it's getting dark – try two hours at the start of the day, two hours at the end.

2 Absorb yourself in visual references, whether it's painting and photography generally, or just previous images of the location that you're visiting.

3 Related to this point is to find out what's been done before. Anyone who's serious about shooting in India, for example, should study Steve McCurry's work (interviewed in issue 100).

4 Try not to make cash your priority, but remember that a really good image will always sell. People who do this for a living have a special quality to their shots, and this is what you need to achieve.



Ox Cart, Morondava, Madagascar
"I'd almost given up shooting wildlife for the day when this guy came up behind me, lit by headlights," says Lee Harvey

Lee Harvey tries to travel light. His weapons of choice are a Canon EOS 5D Mark II D-SLR and Hasselblad medium format camera with a Phase One digital back (see In the Bag, page 106). "The Canon is great for action and wildlife, but one thing you have to watch with D-SLRs is that you don't just blast away. They make it so easy to shoot unthinkingly, while a medium format camera makes you work more slowly and mindfully."

As for Photoshop, it's just for RAW processing and basic Levels and colour adjustments. "I'm not very computer literate," says Lee Harvey, "so I pride myself in trying to get the shot right in-camera. None of my images are ever comped."

Currently his biggest customers are travel magazines and advertising clients. While he's now at the stage where he doesn't have to hustle for work quite so much, he's very aware of how fickle and harsh his chosen field can be. "Go on a long trip and you're very quickly forgotten by commissioning editors and ad people!" he says. "So getting an agent was crucial for me. I'm lucky in that I've never had to do lots of pitches to magazines, but you need to stay on top of what they're interested in and research up-and-coming destinations – Damascus and Beirut have really come on in the last decade, for example. I also sell images through my site and stock libraries such as Cultúra (culturaimages.com) and Getty.

"The government suddenly revoked our travel permits. I just went out there anyway, driving through the night and avoiding roadblocks. You always have to get the shot"

NO EXCUSES

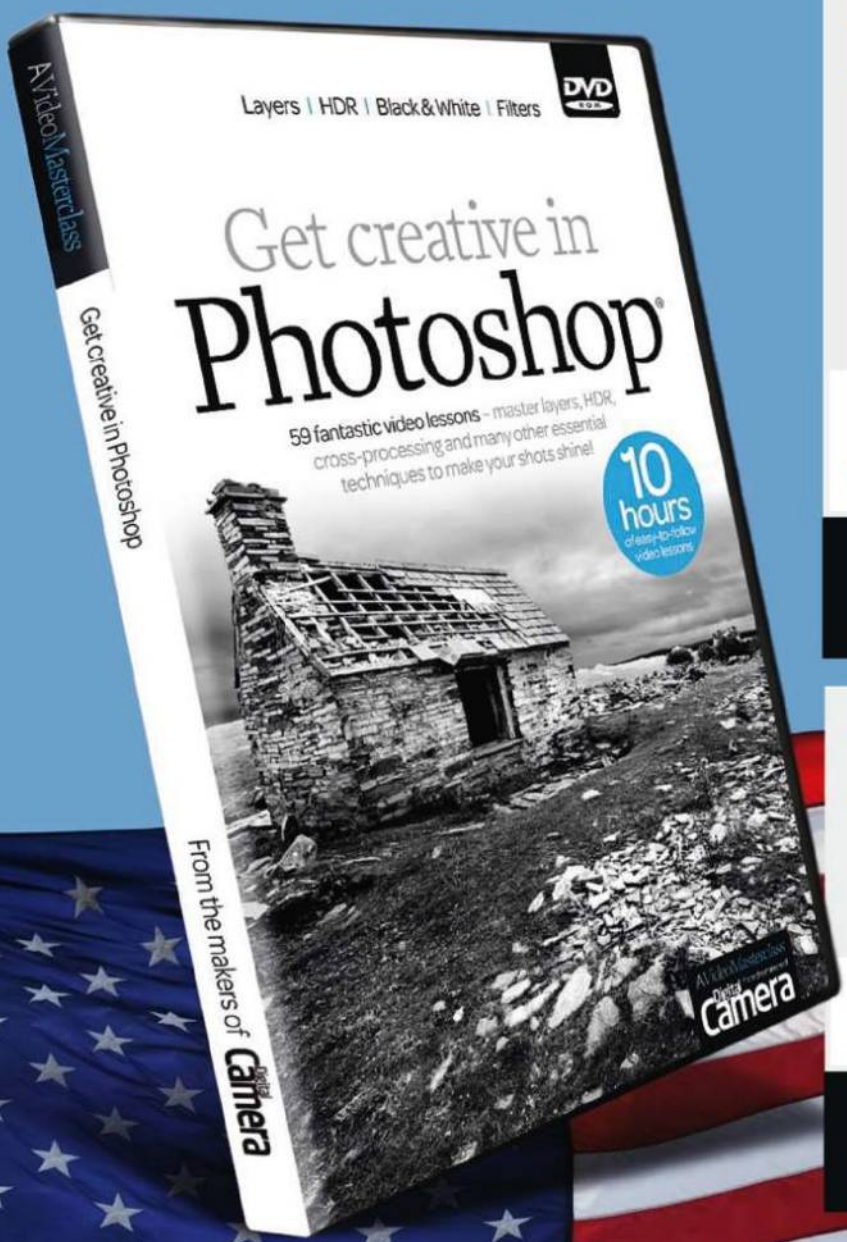
What have been the best and worst photo experiences for Lee Harvey? "Well, if you come back with great photos, you tend to forget about the problems of the trip. So my best photographic experience is always my next trip! As for the worst, I had some problems in Sudan when following in the footsteps of the famous Magnum photographer, George Roger. The government suddenly revoked our travel permits when I was supposed to be out in the regions photographing the Nuba tribe. I just went out there anyway, driving through the night and avoiding roadblocks. Then I backed up all my shots and sent them back home via courier to avoid being busted at the airport. Whatever the problems, you always have to get the shot – no excuses..."

View more of Lee Harvey's stunning travel shots at www.philipleeharvey.com.

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Outside North America? See page 54



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122 Field Tested
From photo vests and handheld GPS devices to tripods and bags, we rate the latest photo gear for you

127 Mini Test
Save sweat and excess baggage costs with these light but sturdy camera supports. We reveal the best buys

128 Ultra-wide-angle lenses
Get the bigger picture with our rigorous and scientific group test – includes lenses for all the major camera makes

29 products reviewed & rated

142 SLR Buyers' Guide
Use this complete listing of every SLR review we've published to find the right camera for your needs

144 Camera Bag Spy
As nature and landscape pro Adam Burton reveals, you don't always need tons of kit to get top results



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Putting equipment through its paces in the field is at the heart of the *Digital Camera* testing process

Trusted Tests

Rigorous › Accurate › Independent › Fair

Digital Camera is brought to you by the UK's most experienced team of photography journalists, which means you can trust everything you read on our pages and can buy your next piece of photography equipment with total confidence. In case you need any further convincing, here's why our tests are the best:

Depth

At *Digital Camera* we take great pride in the rigorous nature of our testing process. Every product and service is tested in appropriate circumstances and a combination of real world and objective tests are performed to ensure all products and services are credibly graded. Take a look at the opposite page for more details.

Passion

We believe the best way to test a product is to use it as it was intended, so our real world testing involves taking equipment on a proper shoot – whether outdoors or in the studio – and testing it exactly as you would use it in real life to let you know whether it's fit for purpose or not.

Objectivity

Although scientific data won't tell you everything about a product, it's a great way to draw direct comparisons and sense check our real world conclusions, so we've devised a series of controlled tests for cameras and lenses that supplement our real world testing with benchmarks.

Independence

Digital Camera is 100% independent and never swayed by the influence of advertisers or PR firms. The tests you read in the magazine are our genuine unbiased opinions and Future Publishing, the company behind *Digital Camera*, has a strict code of conduct on testing.

Transparency

The RAW files of every test image we shoot can be downloaded from our website, PhotoRadar (www.photoradar.com/testing). This means you can check the quality for yourself and even run your own tests if you wish.

HOW WE TEST

Digital Camera's test policy is the most strict and rigorous of any photography magazine. We believe the only way to bring you a genuine and reliable verdict on a product is to test it in both the field and in the lab, so we use two sets of criteria to test SLRs and lenses – real world testing and objective testing.

Real world testing

The first and most important pillar of our process is real world testing. We firmly believe that the best measure of a product is how it performs in the field (or studio) doing the job for which it was intended. The majority of our testing time is therefore spent using products in this way, so we can report back on how they cope under a number of different lighting scenarios and conditions.

The first part of our real world testing involves telling you how a product handles and our impressions of its performance; the second is about examining the image quality produced, so we take a number of photographs under different conditions with every camera and lens we test so you can see the results our experts managed to achieve in the field for yourself.

Benchmarking

The second pillar of our testing policy involves testing the image output of cameras and lenses

OUR SCORES AND AWARDS EXPLAINED

Two philosophies underpin our scoring system: transparency and flexibility. Transparency involves keeping our scoring accurate and explaining why we reach a verdict. Flexibility enables us to change our scoring criteria to ensure that each product and service is scored on appropriate criteria – a tripod, for instance, needs to be judged on different qualities than a digital SLR. Each of our tests



Our controlled test environment enables us to benchmark cameras and lenses

under controlled conditions. We conduct four separate tests for cameras and three for lenses, all of which involve shooting a test chart in a specially configured room. Full details about the tests we perform can be found in the panel on the right of this page.

To minimise the variables when testing SLRs, we use Sigma's 50mm f/1.4 EX DG HSM prime lens, which is available for every camera system.

Next, we perform an analysis of the test images using Imatest's Imatest Master software (www.imatest.com) and generate a benchmark figure for each test, which is then plotted on a graph against rival products to enable you to make a direct comparison of which product performs better under different criteria.

RAW files of all our test results are available to download from our website, PhotoRadar, at www.photoradar.com/testing.

Benchmarks should not be seen as a replacement for (or even a better version of) real world testing – they won't tell you which camera handles best in the field or is easiest to use, for example. But they do enable us to sense-check our real world image test results and you to make an accurate comparison of a product's capabilities.

No other magazine goes this far to deliver test results you can really trust.

scores out of five in one or more sub-categories and then applies an overall mark out of five, enabling you to tell the wheat from the chaff.

Five scores, five meanings:

★☆☆☆☆ Forget it

★★☆☆☆ Below average

★★★☆☆ Good for the money

★★★★☆ Very good in all areas

★★★★★ A truly exceptional, best-in-class product

Awarded to any product that comes top in a group test

Awarded to products that offer exceptional value for money

Awarded to any product that receives five stars in a test

Innovative or breakthrough products receive this special award

THE APPLIANCE OF SCIENCE

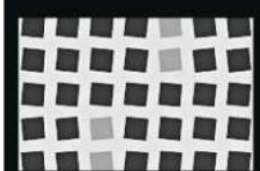
Digital Camera runs a series of objective tests under controlled conditions on both camera bodies and lenses. We run three tests in total for lenses and four tests for cameras. Each test uses Imatest's Imatest Master software to analyse shots of test cards – here's how each test works...

Lens tests



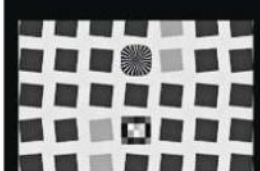
DISTORTION

1 This test measures the distortion caused by the lens and we shoot the simple lined distortion chart pictured above and then output an accuracy percentage in Imatest, with 0% being the most accurate.



CHROMATIC ABERRATION

2 This test measures the appearance of chromatic aberration and we shoot the chart pictured. The results are analysed by Imatest and expressed in pixels, with lower numbers being better.



SHARPNESS

3 Here we measure sharpness at different apertures from the centre to the outer edge. We shoot the chart pictured and Imatest outputs a figure based on line width divided by picture height – high numbers are better.

Camera tests



EXPOSURE ACCURACY

1 This measures how accurate a camera's exposure system is and involves shooting the greyscale step chart pictured. We focus and Spot meter for grey block M and measure the deviation from 0 EV in Imatest.



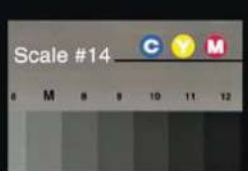
DYNAMIC RANGE

2 This measures the ability of a camera to capture detail in the highlights and shadows and we shoot three images (at -3 f-stops, 0 and +3 f-stops) of the greyscale step chart pictured. Imatest measures results in EV.



COLOUR ACCURACY

3 This measures colour reproduction and we shoot the X-Rite ColorChecker chart pictured above and output an accuracy percentage from Imatest, with 100% being the most accurate result possible.



NOISE

4 This measures colour and luminance noise and we shoot the greyscale step chart pictured, focusing and Spot metering on grey block M. We then measure the deviation from 0% in Imatest.

> TALE OF THE TAPE The Specs

Sensor	14.6Mp APS-C CMOS, 23.4x15.6mm (14.2 effective megapixels)
Focal length conversion	1.5x
Memory	Memory Stick Pro Duo, SD/SDHC/SDXC
Viewfinder	None (optional accessory)
Stills aspect ratio	3:2
ISO range	200-12800
Metering modes	Multi-segment, Centre-weighted, Spot
Focus modes	25-area AF, auto or manual
LCD screen size	3-inch TruBlack
Shutter speed	1/4000 sec to 30 sec, Bulb
Exposure modes	Program AE, Aperture Priority AE, Shutter Priority AE, Manual, Scene modes
Lens mount	Sony E mount
Flash sync	1/160 sec
Flash modes	Auto, red-eye reduction, forced on, forced off, slow sync, rear sync
Drive modes	Single, Continuous, Speed-priority Continuous 7fps, Self-timer 2 secs/10 secs
Weight	229g (body only)
Battery life	330 images (CIPA)
Power supply	Li-ion NP-FW50
Transfer	USB 2.0 High Speed, mini HDMI Type



Digital Camera ON YOUR DISC

APS-C HYBRID Sony NEX-5 > £600 with 18-55mm kit lens > www.sony.co.uk

Size isn't everything...

With an SLR sensor in a slim body, high ISO and HD recording, the **Sony NEX-5** sounds great. Rod Lawton finds out if it is

Never one to get left behind by technology bandwagons, Sony has responded to the increasing popularity of interchangeable-lens 'hybrid' cameras by bringing out the NEX-5.

Along with its little brother, the NEX-3, the NEX-5 is the smallest hybrid camera yet – smaller even than Micro Four Thirds models from Panasonic and Olympus, despite packing an APS-C sized sensor beneath its shell. The NEX-5 is based on a 14.2-megapixel CMOS sensor and capable of shooting full High-Definition (HD) 1920x1080 movies in the AVCHD format.

At the moment, there are three interchangeable lenses to choose from, including a 16mm f/2.8 'pancake' lens, an 18-55mm standard zoom and an 18-200mm superzoom. The 16mm lens is extremely compact, although it's an odd choice for a focal length, since it's equivalent to a 24mm wide-angle on this camera.

Sony offers the 16mm lens as the cheapest camera/lens kit option, and you can't help wondering whether a 35-40mm lens would have been a better choice. Still, conventional Sony D-SLR lenses will also work with the NEX-5 via adaptors, which are available separately.

BUILD QUALITY AND HANDLING

The NEX-5 is an amazingly compact camera. It's also super-slim, at just 24.2mm thick – although this is measured at the thinnest point and excludes the hand grip. It's perhaps a little surprising, then, that Sony has still managed to fit a tilting LCD display to the rear. It's a useful addition, though, particularly when taking waist-level shots and low-angle macros, for example.

While the body might be tiny, the 18-55mm kit lens is normal size. This is the point with mirrorless hybrid cameras – you can miniaturise the body, but you can't really make the lenses any smaller than usual. As a result, the NEX-5 and 18-55mm lens combination is certainly less bulky than an SLR with a similar lens, but it's still a whole lot bigger than any compact, and the balance is off.

The NEX-5's exterior has very few controls. On the top is a big power

REAL-WORLD PERFORMANCE

OUR BEST SHOT

Our guide to what we like most about the images from the Sony NEX-5

Exposure
The exposure accuracy was decent, favouring the shadow areas and avoiding clipped highlights. There's a moderate dynamic range too, which was more than good enough to capture this scene.

Focusing
The NEX-5's autofocus worked fairly well, especially for a sensor-based contrast-detection system. Despite being a little slow, the results we got from it were often surprisingly good.

Colour
Working in Auto White Balance mode produces good results. The colours aren't quite as natural as you'd get from most D-SLR cameras but they're still punchy, vibrant and pleasing.



Stick or twist? Upgrade advice

If you like Sony's Cyber-shots, you'll love the NEX-5. It looks, feels and works in just the same way, but comes with a bigger sensor, more manual control and better image quality. But for keen photographers who've outgrown their point-and-shoot compact and want to develop their skills, it's a dead-end. It's just too hard and/or tiresome to make the manual adjustments needed for more advanced photographic techniques.

AVCHD Explained

AVCHD uses roughly half the space of MPEG-4/Motion JPEG movie files, but it's also more awkward to handle. It needs AVCHD-compatible playback devices and editing software, and uses a complex directory/file structure rather than single, standalone movie files.

FEELING TREATED



How has Sony squeezed an APS-C sensor into the NEX-5's tiny body?



The camera's overall finish and build quality is outstanding



The digital interface is so long-winded it could drive you mad

FEELING CHEATED



The clip-on flash is silly. You'll lose it, break it or leave it at home

Zooming in on the... NEX-5

A quick tour of the camera's key features





The Sony E mount can take A-mount lenses via an adaptor, but in MF only



You can use the accessory shoe for a clip-on flash, optical viewfinder or mic



Sony's swapped its SteadyShot INSIDE anti-shake system for lens-based IS

switch, the shutter release and a playback button. On the back, there's just a movie button, a multi-function rotary controller and two buttons ('soft keys'). The controller and these two buttons have a lot to do, and the NEX-5 relies heavily on its graphical interface to help them do it.

Sony has also developed a rather convoluted control system. To change the ISO, for instance, you first have to press the 'Menu' button, choose the correct icon on the main screen, select ISO Adjustment from a list of settings, and only then are you returned to the regular shooting mode, where the main controller on the back of the camera can be used to change the ISO setting. Most manual adjustments have to be made via a similar route, and there are no shortcuts, which is annoying.

Handling niggles aside, the NEX-5 also lacks a built-in flash, but there's a tiny clip-on unit that comes with the camera. It's pretty weak, with a Guide Number of 7 at ISO100, but it's better than nothing.

CONTROLS AND FEATURES

Returning to the positives, the NEX-5 does offer some great features. Sony's Sweep Panorama mode (see page 120) is excellent and the camera is fast. It has a maximum continuous shooting speed of seven frames per second (fps), although in this mode the exposure and focus are locked from the first frame onwards.

The autofocus isn't bad for a sensor-based contrast-detection system either. It's not super-fast, though, and perhaps mid-way between Olympus's and Panasonic's Micro Four Thirds cameras in terms of speed. However, autofocus remains active while you're shooting movies, which puts the NEX-5 one step ahead of rival D-SLRs. The movie quality is very good, too, and you can even clip on an external mic for better sound quality. There's no manual exposure control, though.

Sony's high-speed processing is used again in the Handheld Twilight mode, which shoots and then combines a series of images to produce a single, sharp composite, and in the Auto HDR (High Dynamic Range) mode, which shoots three images at three different exposures and then combines them in-camera. Both work pretty well, but you have to

Meet the rivals...

See how the NEX-5 fares against the competition



Panasonic Lumix GF1
Price: £549
Slightly bigger than the NEX-5, but has a more conventional control layout
Our score: N/A
Issue reviewed: 99



Olympus E-PL1
Price: £449
This is big and chunky compared to the NEX-5, but it is affordable and practical
Our score: N/A
Issue reviewed: N/A

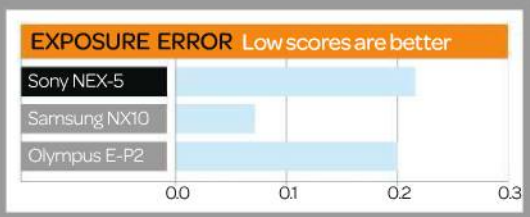


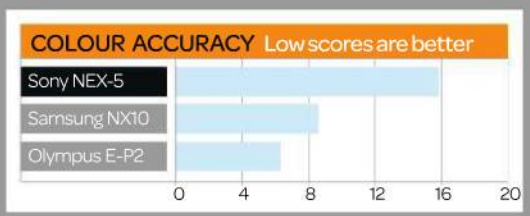
Samsung NX10
Price: £480
The only other APS-C hybrid right now, and the D-SLR styling makes it bigger
Our score: 86%
Issue reviewed: 100

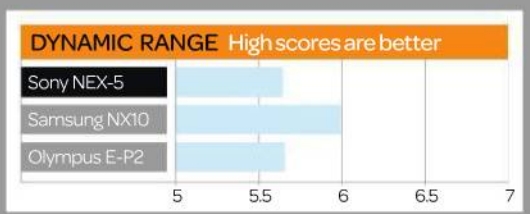


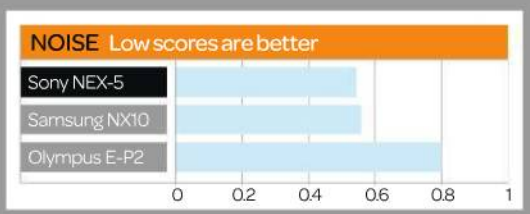
MICRO FORMAT BENCHMARKS

How the NEX-5 fares against its rivals









MICRO FORMAT BENCHMARK VERDICT

Key image quality factors were compared between the NEX-5, the Olympus EP-2 and Samsung NX10 in the *Digital Camera* test suite. All three performed well, with only slight differences when it came to noise, exposure and dynamic range. The major difference was colour. The NEX-5 produces bright, vibrant images similar to a digital compact, while the other models give natural tones close to those we'd expect from a D-SLR.

When it comes to choosing one on image quality, the NEX-5 is a good step-up from a compact. However, if you're looking for a second camera to complement your D-SLR, we'd recommend one of the other two.

WHAT'S THIS? Find out how we test on page 114

Above left Composing images was easy using the tilt-angle LCD display, which was clear and bright

> "You need to keep an eye on the camera's exposure system. The multi-pattern mode favours shadows heavily, and clips highlights such as bright skies in the process"

watch out for 'ghosting', where leaves, people or other objects have moved between exposures, and what you get is an image that can look a little flat. The camera is simply compressing the tones to fit rather than producing any strong HDR effects.

IMAGE QUALITY

When it comes to image quality, the NEX-5 delivers exactly what you'd expect from a 14.2-megapixel APS-C sensor. The 18-55mm lens's definition is good, holding sharpness well across the frame and turning in the same level of detail at its maximum focal length too (not something you can always rely on with kit lenses). Interestingly, Sony's switched over to a lens-based image stabilisation system here, presumably because there's no room inside the NEX's tiny body for its usual mechanism. The 18-55mm lens isn't perfect, though. In our tests, it produced moderate levels of chromatic aberration away from the centre of the picture, and at the wide-angle end of the zoom range there's some pretty fierce barrel distortion.

You need to keep an eye on the camera's exposure system, too. The multi-pattern mode favours shadows heavily, and clips highlights such as bright skies or objects in bright sunlight in the process.

On the other hand, the sensor's high ISO performance is remarkable. The maximum ISO of 12800 is a little optimistic, producing blotchy shadows, reduced saturation and weak detail, but ISO6400 is usable, ISO3200 is good and at ISO1600, once the maximum for digital SLRs, the overall picture quality from the NEX-5 is excellent.

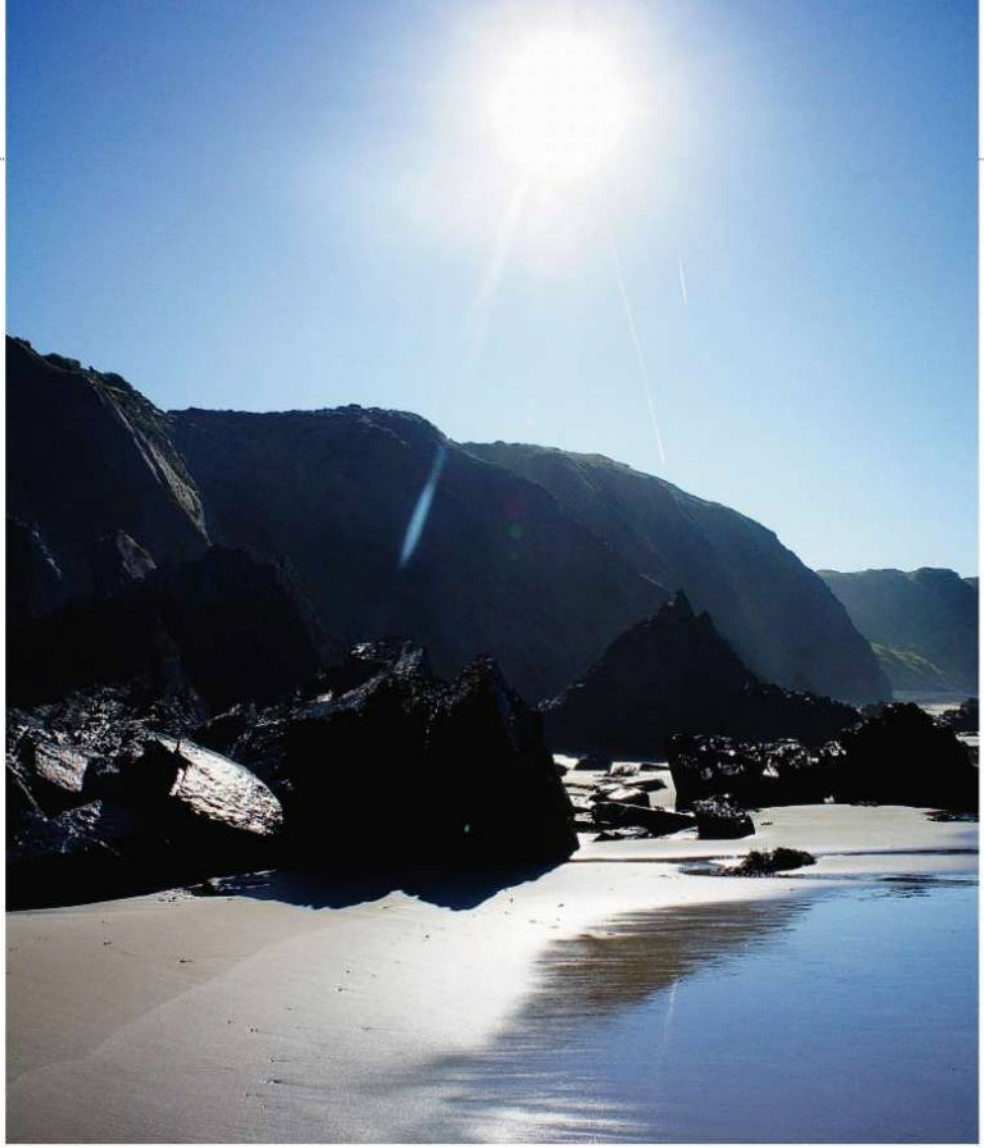
Apart from the high ISO performance, however, the NEX-5's pictures are pretty unremarkable. The two-megapixel advantage it has over Micro Four Thirds cameras makes no practical difference to the detail rendition (although it is much better at high ISOs), and kit lenses from both Olympus and Panasonic are rather better than Sony's 18-55mm,

Tech briefing
Sweep Panorama



Many cameras offer panoramic modes, but until now it's been a manual process where you have to line up the edges of each frame with the previous one using an on-screen overlay. Sony's Sweep Panorama automates the process. The camera automatically shoots additional frames at the right degree of overlap as you sweep the camera across the scene. This is made possible by high-speed processing and merging systems.

But the resulting panoramas are not at the sensor's full resolution. The specs quote a height of 1,856 or 2,160 pixels, depending on the lens/settings used, rather than the 3,056 pixels of normal images. It's enough for big panoramic prints, though, and more than enough for on-screen use. 3D panoramas will be available in July. This is designed for 3D-enabled Bravia TVs and Sony's electronic-shutter 3D glasses.



Above
Even in difficult lighting situations, the metering handled really well, as this contre-jour (towards the light) shot shows

so if anything the balance starts to swing in the other direction.

In short, you may well be blown away by the NEX-5's picture quality if you've just made the step up from a compact camera, but if you're moving sideways from a comparable digital SLR or hybrid, the chances are you'll find Sony's latest a competent but unremarkable beast.



Left
The difference in size between the camera body and kit lens makes the NEX-5 feel front-heavy

OUR CONCLUSION

This camera is a surprise in more ways than one. It's impressively small for a model featuring an APS-C sized sensor, and the body itself is dwarfed even by the rather ordinary 18-55mm kit lens. The second surprise is the extent to which Sony has pitched this camera at beginners rather than the kind of enthusiast photographers who have been buying hybrid cameras. In fact, using the NEX-5 is much more like using one of Sony's Cyber-shot compacts than one of its Alpha D-SLRs, even down to the look and feel of the camera's controls.

The paradox here is that even beginners may find the camera's interface time-consuming and complicated, and may be permanently deterred from trying the manual controls. If you approach this from the other direction, as a D-SLR owner looking for a top-quality pocket camera, the NEX is a disappointment for much the same reason. It's just too difficult to make manual adjustments, so as a result, the NEX-5 rather falls between two stools.

To give credit where it's due, Sony has designed and built an exceptionally small yet powerful hybrid that delivers image quality to match that of a D-SLR, combined with full High-Definition movies, the excellent Sweep Panorama mode, high-speed shooting and more. It's good, but won't be *great* until that interface is better thought-out.

Digital Camera

FEATURES	HANDLING
★★★★★	★★★☆☆
IMAGE QUALITY	**VALUE**
★★★★☆	★★★☆☆

Overall ★★★★☆

WE SAY... A great achievement in so many ways, but a disappointment in others. Sony's spent so much time on clever features and fancy technology that usability seems to have taken a back seat.

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Field Tested

New photo gear reviewed and rated



With the flash mounted on the front of the lens rather than behind, you get a much better spread of light

Digital Camera GREAT VALUE

SUNPAK AUTO 16R PRO

Give your shots a distinctive look without breaking the bank with this great-value ringflash unit

If you're into portrait or macro photography, chances are you've looked into buying a ringflash: they're perfect for close ups as you get a lovely, even spread of light. Once you've seen the price of most ringflash units, though, chances are you've reconsidered.

So Sunpak's 16R unit is something of a bargain at just over £300. Even better, the 16R Pro includes a continuous flash bulb. This is preferable to rival products that use two or more small flashes and reflectors to create the same effect.

It's easy to fit. Slot the battery box onto your hotshoe and the flash itself attaches to the front of your lens. Switch on and you have the usual selection of flash options, including manual, as well as power adjustment.

The differences between a ringflash and a conventionally mounted flash unit are huge. With the flash mounted on the front of the lens rather than behind it, you get a much better spread of light – ideal for illuminating macro subjects (see page 74). Portrait photographers will appreciate the soft halo that appears around the subject edges.

The Sunpak 16R Pro might not have the quality of finish of Canon and Nikon equivalents, but when it comes to the quality of the flash and the price, it's hard to beat.

RINGFLASH Sunpak Auto 16R Pro > £309.99 > www.intro2020 .com

★★★★½

GPS UNIT Garmin Oregon 550t > £489.99 > www.garmin.co.uk

Garmin Oregon 550t

This rugged GPS will stop you ever getting lost again

Whether you're searching for that hard-to-find coastal scene or just your way back home, GPS devices are very handy for photography. The Oregon 550t is a waterproof, off-road unit, with visual display and touch screen. That's the good news.

The bad news is that it costs nearly £500. Then you need to budget another £100 so you can access Ordnance Survey maps. Although GPS locations are marked with Waypoint markers – so you can mark and recall actual locations – this is still a pricey solution.

★★★☆☆



A well made but expensive solution for landscape photographers

CLOTHING Billingham PhotoVest > £185 > www.billingham.co.uk



Photo vests are great for carrying lenses and other accessories

Billingham PhotoVest

Leave the camera bag at home and carry your kit

The beauty of this Billingham vest is that even with pockets fully loaded, pocket bounce is minimised by a shorter cut. This also helps with freedom of movement when crouching down.

It's a shame, then, that the light-coloured outer shell marks quickly and although water resistant, the vest won't keep you totally dry in a downpour.

★★☆☆☆

LENS Dreamy Diana > $60 > http://photojojo.com

Dreamy Diana lens

A plastic lens that will enable you to shoot retro-style pictures with your D-SLR

The oddly named Dreamy Diana is the first plastic interchangeable lens from toy-camera legend Lomo that can be used to create pictures with low saturation, surreal blurs and unpredictable colours. It's compatible with both Nikon and Canon bodies (you specify the adapter type when you order) but feels pretty basic once in place. With no electronics to gauge exposure, you'll need to experiment to get that toy-camera look.

★★★☆☆



The Dreamy Diana is great fun, but getting good results takes time



Freeloader Pro

Designed as a portable re-charger, the Pro carries enough power to recharge a standard D-SLR battery. It can be recharged using its solar panels. Useful if you're out on location with no access to power.

★★★☆☆

£69.99, freeloaderpro.co.uk



Gitzo GM2341

Bolting onto to the base of your camera or lens, this monopod gives you extra stability. The build and finish is a cut above conventional models, which explains why it costs so much.

★★★☆☆

£119.95, www.manfrotto distribution.co.uk



OP/TECH Pro Strap

Made from sturdy neoprene that makes your camera feel lighter, the Pro Strap will ease aches and pains if you habitually lug around a Nikon D3s or Canon 1D-series SLR with monster lens. But it's overkill for everyone else.

★★★☆☆

£19.99, www.newprouk.co.uk



Kenko KFM-2100

For accurate light readings in the studio a light meter is essential. The KFM-2100 reads ambient, cord and non-cord flash, and its price reflects its accuracy. A good choice for professional studio photographers.

★★★★☆

£485, www.intro2020.com



Canon OC-E3

This off-camera cord acts as a link between flash and camera, giving you flexibility when it comes to directing light. While extremely useful and well made, other manufacturers make Canon-fit versions for far less.

★★★☆☆

£60, www.canon.co.uk



SanDisk Extreme HD Video SDHC

Hulking RAW files and HD video call for a big, fast memory card. This new 8Gb SD card from SandDisk is impressively zippy and exceeds the write speeds of most cameras.

★★★☆☆

£49, www.sandisk.com

CAMERA BAG Lowepro SlingShot 202 AW > £89 > www.lowepro.com

Lowepro SlingShot 202 AW

For fast access to your kit on location, this bag is ideal



The comfort of a backpack plus the convenience of a shoulder bag

It's easy to see in hindsight why Lowepro's original SlingShot became popular. Its genius was to combine the comfort of a traditional two-shoulder backpack with the convenience of a shoulder bag.

This new version of the SlingShot has several improvements, including greater room and a handy pack-away tripod mount. We loaded up the pack with a Canon EOS 50D, 100-400mm, 24-70mm and 20mm lenses, a flashgun and a few personal effects, and it held up well.

Swinging the pack by its strap from back to side for quick access to your kit is simple, so you can be up and shooting in seconds. Admittedly, the single strap does start to cut into your shoulder after a full day's shooting, and the bag isn't quite as comfortable as a standard backpack, but the quick access is a definite advantage for the photographer.

If you're in the market for a lightweight bag to safely stow all your kit with room to spare, and you'd like to access it with minimum fuss, you won't go far wrong with this.

★★★☆☆

ODDS & SODS

Kitbag essentials



Vanguard ABH-120K

This compact ball head gives good flexibility with 360° horizontal and 40 to 90° vertical rotation. But it's a little fiddly.

£149.99, www.vanguardworld.com



Speedlite Accessories Kit

This kit gives you lighting effects that are directly comparable with pro rigs and costs much less.

£139.99, www.viewfinderphotography.co.uk

LIGHTING Interfit EX 150 Mark II > £249 > www.jessops.com

Interfit EX 150 Mark II

A home studio flash kit that won't break the bank

Costing almost £200 less than other budget kits, the Interfit EX 510 Mark II includes two heads powered by 150w flash bulbs, two stands, 24-inch softbox, translucent umbrella, sync and power leads.

Rated with a guide number of just 32 at ISO100 the flash is on the weak side, and the features are limited compared to pricier models. But if you want to set up a home studio on a budget, this is a great choice.

★★★★☆



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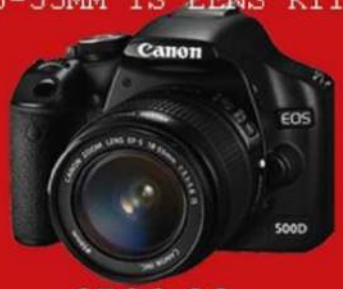
£659.99

CANON 18-135 IS



£249.99

CANON 500D
18-55MM IS LENS KIT



£589.99

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500D 18-55mm IS +55-250mm IS Twin Kit	£759.99
550D 18-55mm IS + 55-250mm IS Twin Kit	£829.99
50D 18-55mm IS + 55-250mm IS Twin Kit	£899.99
7D Body Only	£1,099.99
5D MK II Body Only	£1,749.99

NIKON SLRs	
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D5000 Digital SLR 18-55mm VR Kit	£484.99
D5000 Digital SLR 18-55mm VR + 55-200mm VR Twin Kit	£604.99
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18-200mm EF-S f3.5-f5.6 IS	£419.99
55-250mm EF-S f4.5-5.6 IS	£159.99
17-40mm EF F4L USM Lens	£569.99

NIKON LENSES	
18-200mm F3.5-5.6G ED VR DX	£499.99
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CANON	
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SX20 IS	£269.99
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Finepix S1600	£129.99
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Lumix FT2	£259.99
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Lumix TZ10	£244.99
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OLYMPUS	
Mju Tough 8010	£244.99
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New for 2010, the **Mark II** Light Craft FaderND filters feature a new extra-thin filter frame to help reduce vignetting, and improved optical elements to reduce image softening at longer focal lengths. The **Mark II** Light Craft FaderND filters are available now, from 52mm to 82mm diameter, with prices starting at just £56.99

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LIGHT CRAFT WORKSHOP



KIT ZONE MINI-TEST

Travel tripods and supports

Do you need a little extra support on this year's summer holiday? **Matthew Richards** seeks out a light but sturdy travelling companion

1 Joby Gorillapod SLR

Price: £25 Web: http://joby.com

Each of this tripod's legs consists of a series of flexible joints ending in a rubber foot, so you can wrap it around anything from branches to railings. The 'SLR' version comes with a mini ball head and built-in spirit level, but the maximum load of 800g is only suitable for lightweight SLRs.

★★★★☆

2 Manfrotto Modo 785B

Price: £42 Web: www.manfrotto.co.uk

With five sections in each leg, the Modo stretches to a generous maximum height of 1.5m, yet folds down to just 43cm, once you've opened and closed all 12 locking clips. The weight and maximum rated load are both 1kg, but the legs lack rigidity when fully extended.

★★★☆☆

3 Slik Sprint Pro II

Price: £64 Web: www.sliktripod.co.uk

The baby Slik has many of the features you'd expect in a fully-grown tripod, like multi-angle legs, but in a compact package that weighs only 0.95kg and folds down to 47cm. The maximum load rating of 2kg is enough for a beefy D-SLR with telephoto zoom.

★★★★★

4 SteadePod

Price: £25 Web: www.steadepod.com

After screwing the business end of the SteadePod into your camera's tripod socket, you pull out a length of spring-loaded cable and lock it off. The cable has a flat plate at its end, which you stand on, pulling up on the camera so the taut cable keeps it steady. It's a neat idea that works well in practice.

★★★★☆

5 Tamrac ZipShot

Price: £40 Web: www.tamrac.com

Adjusting leg clamps can be a chore, but the ZipShot has none at all. Just release two short cords and the legs spring out and lock in seconds, although collapsing the tripod takes longer. However, while the tripod weighs just 312g, it also feels flimsy. We would worry about loading it to its maximum 1.35kg capacity.

★★★☆☆

6 Velbon CX-888

Price: £40 Web: www.velbon.co.uk

At 1.3kg and with a folded length of 48cm, the Velbon is the biggest and heaviest tripod here. It also extends to a maximum height of 1.45m and has an impressive load-bearing capability of 3kg. Despite this, the legs aren't overly rigid and, in our tests, the three-way head gave only spongy support.

★★★☆☆

THE CONTENDERS

1 Canon EF-S 10-22mm f/3.5-4.5 USM, £620
2 Nikon AF-S DX 10-24mm f/3.5-4.5G ED, £600
3 Olympus Zuiko Digital 9-18mm ED f/4-5.6, £470
4 Pentax DA 12-24mm f/4 ED AL IF, £800
5 Sigma 10-20mm f/3.5 EX DC HSM, £450
6 Sony Alpha DT 11-18mm f/4.5-5.6, £520
7 Tamron SP AF 10-24mm f/3.5-4.5 Di-II LD Asp IF, £380
8 Tokina 12-24mm f/4 AT-X PRO DX, £500

MOUNT KEY

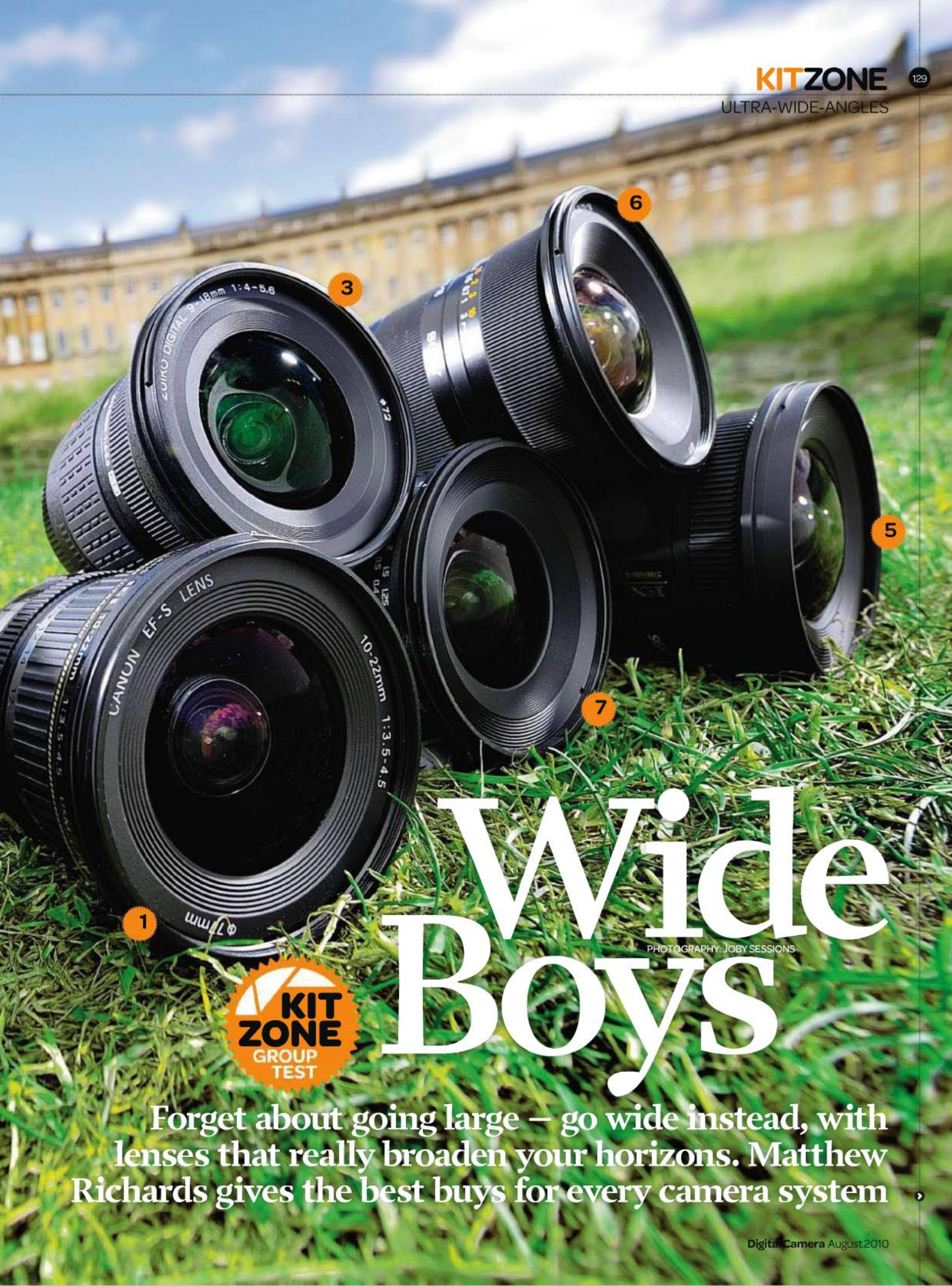
C N O P S

See which lens is available for your SLR with this handy key. C is a Canon mount, Nikon is N, Olympus is O, Pentax is P and Sony is S.

SPECIAL AWARD

To make this test as relevant as possible, we've created a special award to tell you which lens is best for each camera system.





Wide Boys

PHOTOGRAPHY: JOBY SESSIONS

KIT ZONE GROUP TEST

Forget about going large – go wide instead, with lenses that really broaden your horizons. Matthew Richards gives the best buys for every camera system

Who needs an ultra-wide-angle lens? Let's face it, a standard kit zoom lens usually has a moderate wide-angle ability, equating to about 28mm, which is fine for general photography. But there are times – when you're shooting interiors, for example – that you can't squeeze as much into the shot as you'd like to, even though you're already backed into a corner.

Outdoors, an ultra-wide lens can broaden your horizons further still, enabling you to capture sweeping vistas with huge dramatic skies. For creative effect, you can exaggerate perspective enormously, making very close objects appear huge against rapidly receding backgrounds.

You can also top and tail images, cropping them to simulate a panoramic look without the need to take multiple exposures. Sure, you'll lose something in outright resolution but, on a 12Mp camera, a single cropped image can generate panoramic prints up to about 20 inches wide, and it saves the palaver of stitching multiple images together.

There are a couple of things to bear in mind before you splash out though. First, because of the inevitable distorting effects of these lenses, they're not suitable for photographing architecture – converging verticals will be exaggerated, which will make buildings appear to lean inwards.

It's also a mistake to use an ultra-wide-angle lens for taking group portraits, because people towards the edge of the frame will end up with horizontally stretched heads, which they won't thank you for. In situations like this, there's really no alternative to using a more moderate focal length and increasing your shooting distance accordingly.



Kit anatomy Zoom lenses

Complex camera lenses, such as these ultra-wide zoom models, consist of many elements, organised into a number of groups. To cut down on size, weight and the need for extra parts, aspherical elements are computer-designed and precision made.

Low-dispersion elements are also used to reduce chromatic aberrations (colour fringing), while exotic coatings are applied to minimise ghosting and flare. Groups of lenses are moved to enable zoom and focus operations, while an iris enables a variety of apertures to be set, governing exposure in conjunction with the camera's shutter speed.



iStockphoto

Below Ultra-wide lenses may be ideal for exaggerated perspective shots, but they're not necessarily the best choice for serious architectural photographers

STRAIGHT AND TRUE

The most common type of ultra-wide lens is of the rectilinear variety, which includes all the lenses in this test group. These are engineered to make straight lines appear straight, save for some slight barrel distortion. The alternative is a curvilinear lens, which accentuates distortion by turning straight lines into bowing curves. More commonly known as fish-eye lenses, they're the invention of weathermen intent on being able to fit the entire sky into a single image to study cloud formations.

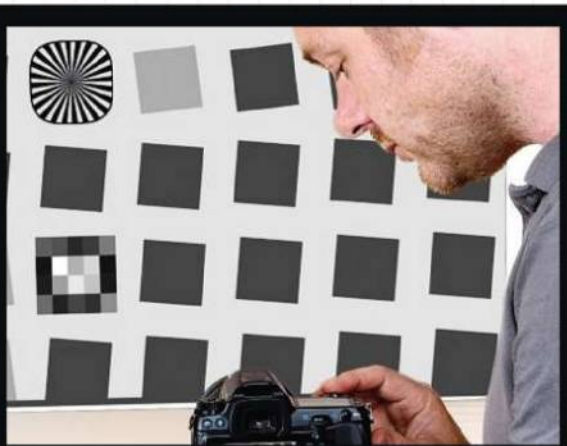
There's no denying that you can get some arty effects with a fish-eye

"An ultra-wide lens can broaden your horizons, enabling you to capture sweeping vistas with huge dramatic skies. For creative effect, you can exaggerate perspective"

How we test lenses Advice you can trust

We assessed each lens's handling characteristics, looking for smoothly operating zoom and focus rings, with natural placement and clearly marked calibrations for zoom and focus distances. The speed, quietness and accuracy of the lenses' autofocus systems was also checked, along with full-time manual focus override and build quality. These factors were gauged against price to determine overall value for money.

For optical quality, any in-camera features that might flatter lens performance were switched off. Each lens was then mounted on a mid-range camera body from the same manufacturer – with the exception of the third-party lenses, which were tested on a Canon SLR. We then took images of two charts: SFRPlus (a grid of slanting squares), shot at each aperture and marked focal length to test for sharpness and fringing (chromatic aberration); and a grid chart at f/8 and at each marked focal length to check for distortion. The resulting images where fed through Imatest Master to gauge the quality of the lens from centre to edge.



Digital editor Ali Jennings tests a lens in *Digital Camera*'s test suite

lens, but their appeal is comparatively limited. If you're thinking about making some extra money by selling your photos, it's worth considering that most stock image libraries won't touch fish-eye images with a bargepole, let alone a mouse-click in the approvals box. Fish-eye lenses are hardly ever available with zoom capabilities either, although Tokina's 10-17mm model is a notable exception to this rule of thumb.

HOW WIDE CAN YOU GO?

The vast majority of us use D-SLRs with APS-C sensors, lording it over our full-frame cousins when it comes to picking out details in the distance, because the crop factor (see 'The focal length multiplier', below right) dramatically extends the reach of telephoto lenses. The trade-off is that ultra-wide-angle focal lengths are more of a design challenge, requiring much shorter focal lengths than usual.

Only a relatively small central area of the image circle produced by a full-frame lens can be used on a D-SLR with a smaller APS-C sensor, so ultra-wide lenses have to be specially engineered for the job. This means that you need to look for Canon EF-S, Nikon DX, Sigma DC or Tamron Di-II lens designations, to name but a few. Full-frame lenses simply won't do the job.

The good news is that ultra-wide lenses for APS-C cameras tend to be considerably more compact and lightweight than their full-frame counterparts. It's equally true that, because depth of field is affected more by actual rather than effective focal length, the typically large depth of field produced by an ultra-wide lens on a full-frame camera is made larger on an APS-C camera. The upshot is that you can keep close and distant objects sharp simultaneously, even when using relatively large apertures in low-light conditions.

The choice of lenses has grown enormously over the last few years, with independent manufacturers such as Sigma, Tamron and Tokina entering the fray to battle against camera makers including Canon, Nikon, Olympus, Pentax and Sony. This kind of competition is always a good thing – the net results being an increase in quality and a decrease in selling price. And when picking an ultra-wide lens for your camera, it pays to be choosy.

EQUIPMENT KNOW-HOW

FEATURES TO LOOK FOR

Everything you need to know about an ultra-wide lens

Filter thread
This can be used for attaching a range of creative filters or a highly effective petal-shaped hood to reduce unwanted ghosting and flare, which can be a particularly frustrating drawback of ultra-wide lenses.

Front element
This is the lens's eye on the world and it's important to keep it protected. Despite the extreme convex curvature of the front element in this type of lens, you should still be able to fit a protective UV filter.

Zoom range
Outright zoom range is less important in ultra-wide lenses. You'll find that most photographers tend to use them at or near their widest-angle zoom setting almost all of the time.



Focus
The smart autofocus systems of the Canon, Nikon, Pentax and Sigma lenses tested in this group test enable full-time manual focus override, even when they're switched to autofocus mode.

Distance scale
A distance scale is handy for setting the hyperfocal distance to keep as much of a scene as possible in focus – especially useful when shooting with an ultra-wide lens. See Photo Advisor, page 93, for details.

Mount (under cap)
Higher-quality lenses feature metal rather than plastic mounting rings for greater precision and longevity. The mount also contains all the contacts for communication with the camera.

Watch out for... The focal length multiplier

The focal length multiplier (or crop factor) of cameras indicates how much you need to magnify the focal length to get its effective equivalent. Nikon, Pentax and Sony cameras have a magnification factor of 1.5x, most Canon D-SLRs have 1.6x and Olympus Four Thirds have a 2x magnification. A zoom lens with a focal length of 10-20mm will therefore have an effective focal length of 15-30mm, 15-32mm and 20-30mm on these cameras respectively.





CANON EF-S 10-22MM F/3.5-4.5 USM

A lightweight that packs a punch

Slightly larger than most lenses in the group, the Canon is nevertheless quite light in terms of weight. However, it feels reassuringly robust when it comes to overall build quality, and offers a fairly impressive zoom range as well. There's some quality glass under the skin too, with three aspherical elements plus a Super-UD (super ultra-low dispersion) element that aims to keep chromatic aberration to a minimum (albeit with only a modicum of success, as our image tests on pages 138-139 reveal).

Canon's Super Spectra lens coatings are employed in a bid to fend off ghosting and flare, but a decent lens hood is also required for outdoor shooting. It's a shame, then, that Canon is in a minority of one by not supplying a lens hood as standard. This means you'll need to buy the optional EW-83E hood separately at an additional cost of around £30.

SELF-CONTAINMENT

Like other lenses in the group, the Canon features internal focusing, so the front element neither rotates nor extends from the main lens barrel throughout the focus range. Better still, the lens also has internal zooming, so its overall length remains fixed at any focal length setting.

Autofocus benefits substantially from Canon's ring-type USM (ultrasonic motor) system, which is blissfully quiet as well as proving super-fast in our tests. You also get full-time manual focus override, courtesy of the smooth and precise focus ring, along with a neat focus distance scale that's discreetly placed beneath a viewing window.



Tech focus...
The overall length of the lens stays fixed throughout the zoom range. This is quite normal for focus adjustments, but the Canon's internal zoom is a bonus only shared here by the Tokina 12-24mm lens

Digital Camera

FEATURES	★★★★★
BUILD QUALITY	★★★★☆
IMAGE QUALITY	★★★★☆
VALUE	★★★★☆
OVERALL	★★★★☆

NIKON AF-S DX 10-24MM F/3.5-4.5G ED

The new Nikon extends your range

Nikon's venerable 12-24mm ultra-wide zoom has the benefit of a reasonably fast f/4 aperture that remains constant throughout the zoom range. By contrast, the newer 10-24mm lens has a variable f/3.5-4.5 maximum aperture but, crucially, it extends the zoom range where it matters most: at the wide-angle end, effectively boosting it to an equivalent 15mm compared with 18mm for the older lens. A 3mm difference might not sound like much, but it makes a massive difference to the angle of view, enabling you to shoehorn a fair bit more of a scene into the frame.

As a G-series lens, there's no aperture ring on the lens barrel, but this omission is shared by every other lens in the group. Importantly, the Nikon bears the AF-S designation, featuring whisper-quiet, super-fast and deadly accurate Silent Wave autofocus performance. Indeed, the autofocus proved the fastest on test and, like the Canon USM and Sigma HSM systems featured in the group, comes complete with the luxury of full-time manual focus override.

SLIGHTLY STICKY

Compared with the Canon lens, the zoom and focus rings on the Nikon feel a bit sticky and slightly lacking in smoothness. In other respects, however, build quality is pretty good and optical quality is enhanced by two ED (extra-low dispersion) elements, three aspherical elements and Nikon's SIC (super integrated coating), which aims to increase light transmission through the lens, while improving colour consistency and reducing flare.



Tech focus...
Nikon's AF-S Silent Wave autofocus system works a treat on this lens, delivering ultra-fast, unerringly accurate and whisper-quiet performance, complete with full-time manual focus override

Digital Camera

FEATURES	★★★★★
BUILD QUALITY	★★★★☆
IMAGE QUALITY	★★★★☆
VALUE	★★★★☆
OVERALL	★★★★☆





OLYMPUS ZUIKO DIGITAL 9-18MM ED F/4-5.6

It's a game of Four Thirds

Like any concept, the Four Thirds imaging system has its pros and cons. On the plus side, camera bodies and lenses tend to be very compact, but then the four/thirds aspect ratio that's in keeping with pre-widescreen viewing screens now looks dated. The 2x times crop factor plays into your hands at the telephoto end but makes the manufacture of ultra-wide lenses even more of a challenge.

The Olympus 9-18mm is not only physically the smallest lens in the group, but also has the shortest focal length. However, once you apply the crop factor, the effective widest-angle zoom setting is a less than impressive 18mm, so you simply can't get such a wide angle of view as you do with most lenses in the group.

HOW FAR?

Zoom and focus rings are silky smooth but, despite the focus ring rotating easily in autofocus mode, it's really only freewheeling, rather than enabling a manual focus override. The autofocus itself proved quite prone to hunting back and forth in our tests in situations where other lenses managed to lock on without any fuss. The lack of a focus distance scale seems a glaring omission too. Again, this is unique in the group.

On the plus side, there's some high-quality glass here, including regular aspherical, ED glass-mould aspherical and DSA (dual super aspherical) elements, which help to maintain optical prowess despite the very compact build.



Tech focus...
The Four Thirds system provides the opportunity to make small, lightweight lens designs. It's just a shame that the effective widest-angle focal length isn't that impressive

Digital Camera

FEATURES	★★☆☆☆
BUILD QUALITY	★★★☆☆
IMAGE QUALITY	★★★☆☆
VALUE	★★★☆☆
OVERALL	★★★☆☆

PENTAX SMC DA 12-24MM F/4 ED AL IF

Small on width, big on price

As with the Olympus and the Nikon-fit Tokina lenses, this Pentax has an equivalent maximum wide-angle focal length of 18mm, which is slightly underwhelming. It's not great for close-ups either, since the minimum focusing distance is 30cm, as opposed to 24cm or 25cm for most others on test. On the plus side, it's smartly turned out, with a robust build and a high-quality feel.

Inside, the lens features two aspherical elements and ED glass in a bid to keep image quality up to scratch. We'll get to how this works out in practice later. The fact that the maximum aperture of f/4 stays constant throughout the zoom range is another bonus.

QUICK SHIFTER

Zooming is a very pleasant experience with this lens, thanks to a silky smooth zoom ring that is fitted with a deeply grooved rubber collar. Focusing is more of a mixed blessing. Autofocus is ruthlessly rapid, to the point that the mechanism clunks into the end stops at either end of its travel quite alarmingly.

The autofocus motor is also very noisy, not only compared with the near-silent Canon, Nikon and Sigma systems, but also in contrast to the other lenses that feature conventional micro-motor autofocus. One bit of good news is that the lens features Pentax's Quick Shift function, which is unusual for micro-motor autofocus in that it enables full-time manual focus override. Ultimately, however, the most notable thing about this lens is its price, which is around double some of the competition.



Tech focus...
The autofocus is very loud and shrill, but at least it's fast, and the Quick Shift system is good to have, enabling full-time manual focus override

Digital Camera

FEATURES	★★★☆☆
BUILD QUALITY	★★★★☆
IMAGE QUALITY	★★★☆☆
VALUE	★★☆☆☆
OVERALL	★★★☆☆

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SIGMA 10-20MM F/3.5 EX DC HSM

A real go-faster wide-angle

Sigma's original 10-20mm f/4-5.6 ticked pretty much all the right boxes, and rapidly became a top seller for users of Canon, Nikon, Olympus, Pentax, Sigma and Sony bodies alike. There was a lot to love, from Sigma's fast and ultra-quiet HSM (hypersonic motor) autofocus with full-time manual override, to solid build and impressive image quality. To top this, the lens came at a knockdown price that put a few own-brand lenses to shame.

This new version of the already popular lens goes further still, with a major redesign that ushers in a constant maximum aperture of f/3.5 throughout the zoom range, making it the fastest lens in the group. For the first few months after launch, the advancements came at a high price to buyers, with the street price being about £210 more than the older version. But it's since dropped dramatically, and the price difference is now only £50.



Tech focus...
The Pentax and Tokina lenses in the group also feature a constant maximum aperture throughout the zoom range. But the Sigma is marginally faster at f/3.5 instead of f/4

QUALITY COUNTS

Internally, the lens is quite different to the older model, featuring an extra element in one of its groups, and four aspherical, one SLD (special low dispersion) and two ELD (extraordinary low dispersion) elements.

Considering the Sigma is one of the cheapest lenses in the group, it's very well built, with a high-quality feel, impeccable finish and some neat touches, including the distance scale being positioned beneath a viewing window. As usual, Sigma doesn't skimp on accessories either, and the lens is supplied with a plush, padded soft case, along with a quality petal-shaped hood.

Digital Camera

FEATURES	★★★★★
BUILD QUALITY	★★★★☆
IMAGE QUALITY	★★★★☆
VALUE	★★★★★
OVERALL	★★★★☆

SONY ALPHA DT 11-18MM F/4.5-5.6

Not quite the alpha male

The DT 11-18mm is relatively inexpensive for an own-brand lens, but its maximum aperture range of f/4.5-5.6 makes it the slowest lens in the group, even though it's only marginally slower than the f/4-5.6 Olympus. The lack of speed is more noticeable when it comes to autofocus, which is particularly ponderous and lacks full-time manual override.

Another problem we found is that the large focus ring rotates during autofocus, and as such it's easy to foul its action with your fingers when holding the camera and lens in a natural grip. But switch to manual focus, via a switch on the camera body, and the focus ring lacks smoothness and finesse.

The zoom range is the most measly of any lens on test, and while this isn't such a major concern in ultra-wide lenses as it would be with other types of zoom lens, the effective maximum wide-angle focal length of 16.5mm is hardly the best in class.



Tech focus...
The zoom and focus rings are easily accessible, since they take up almost the entire length of the lens barrel between them

USUAL SUSPECTS

The lens includes a typical combination of aspherical and ED elements, but is noticeably shorter than all other lenses in the group, apart from the Olympus Four Thirds lens – and is only a single millimetre longer than that one.

Apart from compactness and a lightweight build, there's little to get excited about – fancy features are entirely absent. Even the focus distance scale is printed around the outside of the focus ring, rather than being tucked away behind a viewing window. Overall, the Sony lacks a certain feel-good factor.

Digital Camera

FEATURES	★★☆☆☆
BUILD QUALITY	★★★☆☆
IMAGE QUALITY	★★★☆☆
VALUE	★★☆☆☆
OVERALL	★★☆☆☆

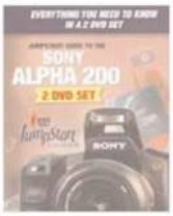
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TAMRON SP AF 10-24MM F/3.5-4.5 DI-II LD ASP IF

New Tamron increases your reach

The big contest in independent ultra-wide lenses used to be between the original Sigma 10-20mm and the Tamron 11-18mm. However, while Sigma tweaked its design to provide a faster, constant aperture, Tamron has gone all out on zoom range, and the new 10-24mm offered the greatest scope of any ultra-wide lens on the market when it was launched.

Fairly light in weight, the Tamron still packs some impressive glass, including three hybrid aspherical and two LD (low dispersion) elements, plus an HID (high-refractive index) element, to combat both on-axis (focus shift) and lateral chromatic aberrations. Newly developed multi-layer lens coatings and an inner surface treatment are also employed to minimise stray light entering and bouncing around inside the lens.



Tech focus...
The Tamron was the first ultra-wide zoom lens to hit the market that managed a mighty 2.4x zoom range, although the new Nikon matches it

A BRIDGE TOO FAR?

The flip side is that such an extravagant zoom range runs the risk of degrading optical quality in terms of sharpness, distortions and chromatic aberrations.

While the Sigma lens boasts a fast, ultra-quiet HSM autofocus system, the Tamron relies on a conventional micro-motor. Autofocus is actually surprisingly quiet but proved painfully slow in our tests, taking almost four seconds to trundle from one end stop to the other and back again – that's only half the speed of the sluggish Sony. The redeeming feature is that the Tamron is the cheapest lens in the group.

Digital Camera

FEATURES ★★☆☆☆
BUILD QUALITY ★★★☆☆
IMAGE QUALITY ★★★☆☆
VALUE ★★★★☆
OVERALL ★★★☆☆

TOKINA 12-24MM F/4 AT-X PRO DX

Pro-level build quality

Big, weighty and tough, the Tokina 12-24mm has almost battleship-like build quality and is available in Canon and Nikon fit options. Either way, the maximum effective wide-angle focal length is unimpressive at 19.2mm and 18mm respectively, compared with own-brand lenses, which work out at 16mm for the Canon and 15mm on the Nikon.

The Tokina is currently available in Mark I and Mark II guises, the latter model being about £110 more expensive to buy, with a street price of £500. On the face of it, since both lenses look pretty much identical and operate in exactly the same way, this makes the Mark I look something of a bargain. The only critical difference is that the Mark I version of the Nikon-fit lens doesn't have a built-in autofocus motor, so it won't autofocus on the D40, D40x or D60. The Mark II also features a new optical coating, which Tokina claims is more effective at reducing ghosting and flare.



Tech focus...
There's no full-time manual override, but at least the push-pull focus ring makes it easy to snap between autofocus and manual focus

BLUE HALO

Like the Pentax and Sigma lenses in the group, and in keeping with its Pro label, the Tokina has a constant maximum aperture, which remains fixed at f/4 throughout the zoom range. As you'll see from the results of our lab tests overleaf, the Tokina lens acquits itself pretty well in terms of optical quality. One caveat that's worth noting, however, is that we frequently suffered blue colour fringing when shooting at large apertures in the wider focal length range, not only towards the corners of the frame but across the whole image.

Digital Camera

FEATURES ★★☆☆☆
BUILD QUALITY ★★★★★
IMAGE QUALITY ★★★☆☆
VALUE ★★★☆☆
OVERALL ★★★☆☆

IMAGE QUALITY IN FOCUS

CANON 10-22mm



SHARPNESS TEST



Centre sharpness at all focal lengths is good. There's a decline in mid-frame sharpness, which only degrades slightly towards the edge.

FRINGING TEST



Even with the Super-UD Element, purple and green aberration is apparent in high-contrast areas and especially prevalent at 10mm.

DISTORTION TEST



Distortion is moderate at 10mm and exactly what you'd expect for this focal length. At 16 and 22mm distortion is considerably reduced.

IMAGE TEST VERDICT

This lens's build quality is matched by sharpness throughout the focal range. Fringing and barrel distortion are relatively mild.

★★★★☆

NIKON 10-24mm



SHARPNESS TEST



Centre sharpness is incredibly good at all focal lengths. Mid-frame and edge sharpness are reduced but still incredibly impressive.

FRINGING TEST



Slight blue/green aberration appears at the shortest focal length, but it almost disappears as you move through the zoom range.

DISTORTION TEST



Barrel distortion is very apparent at 10mm, giving the lens a mild fish-eye effect. At the mid-range focal point, it reduces considerably.

IMAGE TEST VERDICT

Top of the test for overall lens sharpness, it also produces low chromatic aberration. Some may find the wide-angled distortion a little too much.

★★★★☆

OLYMPUS 9-18mm



SHARPNESS TEST



Our test images show even sharpness across the frame at all focal lengths, with minimal drop-off near the edge.

FRINGING TEST



There's very slight purple/blue chromatic aberration towards the edge at both focal length extremes. There's little to no fringing at 14mm.

DISTORTION TEST



Due mostly to the 2x crop factor, the Olympus's distortion is lower than any other lens tested at all but the widest focal length.

IMAGE TEST VERDICT

The sharpness is consistent at all focal lengths, and is matched by reasonable chromatic aberration and distortion performance.

★★★☆☆

PENTAX 12-24mm



SHARPNESS TEST



Centre sharpness is good at 12mm, but it falls off towards the edge. At other focal lengths it performs well, with sharpness dropping slightly.

FRINGING TEST



Heavy blue aberration is apparent towards the outer edges at a focal length of 12mm, but this decreases at increased focal lengths.

DISTORTION TEST



At 12mm, the barrel distortion is quite apparent, but as you move through the focal range the distortion reduces in tandem.

IMAGE TEST VERDICT

Although sharpness drop-off between the centre and edge of the frame was low, the influence of chromatic aberration is felt at 12mm.

★★★☆☆

You can download all our test shots and graphs and view an archive of previous test shots at our website. Visit **www.photoradar.com/testing** for more details

SIGMA 10-20mm





Just pipped by the Nikon, the Sigma performs well at the centre and mid-frame. Sharpness does fall off towards the edge, though.



Chromatic aberration is evident at all focal lengths, manifesting itself as a mild green fringe in high-contrast areas of the frame.



Distortion is noticeable at 10mm, but as you move through the focal range the effect reduces, producing a slight pinch at the 20mm extreme.

IMAGE TEST VERDICT

An all-round performer with excellent centre-to-mid-frame sharpness at both 10 and 14mm, plus good fringing and distortion results.

★★★★☆

SONY 11-18mm





Centre-frame sharpness at the widest angle was great, but poor at the longer focal lengths. Frame edge sharpness was low at all lengths.



The Sony was unbeatable when it came to chromatic aberration, with only a slight red fringe appearing mid-frame to frame edge.



Distortion at 11mm was as obvious as it was on the Nikon, but at 16mm it had reduced dramatically, with almost no effect at 18mm.

IMAGE TEST VERDICT

A reasonably good lens that tops the results in some areas, but doesn't quite cut it in others. It excels in producing shots with minimal fringing.

★★★☆☆

TAMRON 10-24mm





Centre sharpness at all focal lengths was good, capturing fine edge detail. There's a clear drop off in sharpness at the edges of the frame, though.



The Tamron performed well for chromatic aberration, with little evidence at all focal lengths of it negatively impacting on shots.



At 10mm, this out-performed the other lenses with low barrel distortion. At 16mm it increases, before tailing off again at 24mm.

IMAGE TEST VERDICT

This solid third-party option returns consistent results for sharpness, chromatic aberration and distortion at all focal lengths.

★★★☆☆

TOKINA 12-24mm





This lens performed well from the centre to the frame's edge at all focal lengths, with only slight edge sharpness drop off at 24mm.



At 12 and 24mm, thick blue fringing is instantly apparent. At 15mm, however, chromatic aberration only shows at the edge of the frame.



The amount of distortion produced from 12-24mm was low and distortion fell off in tandem with focal length increases.

IMAGE TEST VERDICT

A good performer when it comes to sharpness and distortion, but the influence of chromatic aberration at all focal lengths lets it down.

★★★☆☆

LENS BENCHMARKS

See how each lens performed in our lab tests

Our lab tests confirmed many of the findings of our image quality tests on pages 138-139. The sharpness results in particular were extremely revealing, with some lenses performing well at their widest focal length but dropping off as they moved through the focal range. The best lenses produced consistent results throughout the focal range, with the Nikon 10-24mm topping the group. The Tokina 12-24mm faired incredibly well at its widest angle, but sharpness dropped off significantly at 24mm.

Each lens did well for fringing, with the Sony 11-18mm excelling. Nikon fared worst for distortion and the Tamron 10-24mm best at each lens's respective widest focal lengths.

Every lens fared reasonably well in our tests, with each showing strengths in different areas. The Canon 10-24mm is probably the best all-round performer, with the Nikon and Sigma 10-20mm close behind.

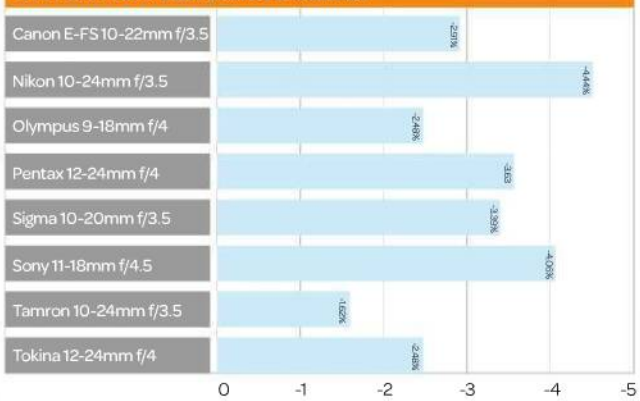
WHAT'S THIS? Find out how we test on page 114

SHARPNESS High scores are better



We measure sharpness by dividing line width by pixel height. Readings are taken at the centre, middle and edge of the frame and then averaged

DISTORTION Low scores are better



Here we're measuring barrel distortion at a focal length of 10mm and with an aperture of f/8. The perfect result in this test would be 0%

FRINGING Low scores are better

	Widest	Halfway	Narrowest
Canon EF-S 10-22mm f/3.5	0.237	0.107	0.151
Nikon 10-24mm f/3.5	0.186	0.121	0.089
Olympus 9-18mm f/4	0.130	0.090	0.142
Pentax 12-24mm f/4	0.388	0.286	0.132
Sigma 10-20mm f/3.5	0.375	0.264	0.238
Sony 11-18mm f/4.5	0.098	0.081	0.167
Tamron 10-24mm f/3.5	0.153	0.256	0.313
Tokina 12-24mm f/4	0.775	0.093	0.793

Shooting at f/8, we measure fringing (or chromatic aberration) in pixels at three focal lengths. The perfect result in this test would be 0%

HOW THE LENSES COMPARE



	Canon EF-S 10-22mm f/3.5-4.5 USM	Nikon AF-S DX 10-24mm f/3.5-4.5G ED	Olympus Zuiko Digital 9-18mm ED f/4-5.6	Pentax SMC DA 12-24mm f/4 ED AL IF	Sigma 10-20mm f/3.5 EX DC HSM	Sony Alpha DT 11-18mm f/4.5-5.6	Tamron SP AF 10-24mm F/3.5-4.5 Di-II LD Asp IF	Tokina 12-24mm f/4 AT-X PRO DX
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Street price	£620	£600	£470	£800	£450	£520	£380	£390
Mount options	C	N	O	P	C N O P S	S	C N P S	C N
Autofocus motor	Ultrasonic	Silent Wave	Micro motor	Micro motor	Hypersonic	Micro motor	Micro motor	Micro motor
Filter size	77mm	77mm	72mm	77mm	82mm	77mm	77mm	77mm
Accessories	None	Hood & pouch	Hood	Hood	Hood & pouch	Hood	Hood	Hood
Dimensions (DxL)	84x90mm	83x87mm	73x80mm	84x88mm	87x88mm	83x81mm	79x87mm	84x90mm
Weight	385g	460g	280g	430g	520g	360g	406g	570g
FEATURES	★★★★★	★★★★★	★★☆☆☆	★★★☆☆	★★★★★	★★☆☆☆	★★☆☆☆	★★★☆☆
BUILD QUALITY	★★★★☆	★★★★☆	★★★☆☆	★★★★☆	★★★★☆	★★★☆☆	★★★☆☆	★★★★★
IMAGE QUALITY	★★★★☆	★★★★☆	★★★☆☆	★★★☆☆	★★★★☆	★★★☆☆	★★★☆☆	★★★☆☆
VALUE	★★★★☆	★★★★☆	★★★☆☆	★★☆☆☆	★★★★★	★★☆☆☆	★★★★☆	★★★☆☆
OVERALL	★★★★½	★★★★☆	★★★☆☆	★★★☆☆	★★★★☆	★★☆☆☆	★★★☆☆	★★★☆☆

THE DIGITAL CAMERA VERDICT

SEE THE BIGGER PICTURE, BUY THE BETTER ZOOM

Canon and Nikon users are spoilt for choice, but there are still some other intriguing options

Compared with a compact camera, the single best thing about any D-SLR is that you can fit the most suitable lens for any shooting scenario. Naturally, the best available lens will depend on which model of camera you're using, and some say it's safest to stick with the camera manufacturer's own lenses. That's definitely not always the case, but if you're using either a Canon or Nikon D-SLR that isn't a full-frame model, there's no need to look further than the respective own-brand ultra-wide lens. For these two main players, build quality feels marginally higher in the Canon 10-22mm lens, while the Nikon 10-24mm wins out in optical sharpness, especially when looking at the centre of the frame. Some independently manufactured lenses have a lot to offer, both in terms of quality and value for money. The Tamron and Tokina lenses in the group cost less than half the price of the Pentax own-brand 12-24mm lens, although only the Tamron is available in Pentax fit. Tokina only makes Canon or Nikon versions of its 12-24mm and unfortunately the Mark I edition won't autofocus on Nikon D40, D40x or D60 bodies.

Compared with the original, Sigma's new edition of its 10-20mm lens offers a step up in quality and is still cheaper than any manufacturer's own-brand ultra-wide zoom. Sigma doesn't make a Four Thirds version of its new 10-20mm lens, but the older f/4-5.6 model is still widely available for under £400. All in all, there's something for everyone, but below we'll focus on our top choices for specific makes of camera.



CANON 10-22MM

What's good: Lightweight but solid build quality, good optics and smart autofocus.

What's bad: Lens hood is an optional extra costing £30. Cheeky.

Our verdict: This is as good as it gets for Canon users.

★★★★☆

Digital Camera

CAMERA SYSTEM BEST BUYS

Get the lowdown on our picks for every brand of SLR



NIKON 10-24MM

What's good: Razor-sharp at the centre of the frame, great autofocus, big zoom range.

What's bad: Zoom and focus rings are a little less smooth than they could be.

Our verdict: A top performer for any Nikon DX camera. You can't buy better.

★★★★☆



OLYMPUS 9-18MM

What's good: Very good optical performance with low chromatic aberrations and distortion.

What's bad: Short on features, poor autofocus performance, limited angle of view.

Our verdict: Despite the shortcomings, it's well priced and rules the Four Thirds roost.

★★★☆☆



SIGMA 10-20MM

What's good: Better all-round performance than the Pentax equivalent at half the price.

What's bad: The Sigma is a little heavier than Pentax's own-brand offering.

Our verdict: The Sigma is a standout winner for optics and value for money.

★★★★☆



SIGMA 10-20MM

What's good: Much better autofocus system than Sony's lens, and more zoom range.

What's bad: Chromatic aberrations are slightly more noticeable than with Sony's lens.

Our verdict: An altogether more advanced and feature-packed lens than the Sony.

★★★★☆

Money to burn?

Budget A4 printers

Do your best shots justice with a quality printer that won't break the bank



Canon PIXMA MP640
Price: £150
Contact: www.canon.co.uk, 01737 220000
Reviewed: Issue 96
Our verdict: Combining high-quality printing with good photo scanning, the MP640 is a superb all-rounder with excellent performance. The printer's also got a very good high-resolution scanner and intuitive touch-screen controls.



Canon PIXMA iP4700
Price: £85
Contact: www.canon.co.uk, 01737 220000
Reviewed: Issue 96
Our verdict: As a real money-saver, this can't be beaten. It includes the latest generation of Canon's five-ink printing technology and there are some neat extras on offer too, so you don't have to keep swapping between papers.



Epson Stylus Photo P50
Price: £80
Contact: www.epson.co.uk, 08714 237766
Reviewed: Issue 96
Our verdict: Despite being light on features and connectivity, this printer is another money-saver that delivers where it matters – photo quality is very convincing and the Epson also offers a solid black-and-white printing performance.

SLR Buyers' Guide

Every SLR and interchangeable lens camera on the market reviewed by *Digital Camera*, plus our verdicts. Use it to decide which camera kit is best for you...

D-SLRS

Product	Price	Sensor type	Contact	Reviewed
CANON				
Canon EOS 450D	**£507**	**APS-C, CMOS, 12.2Mp**	**www.canon.co.uk, 01737 220000**	**Issue 73**
Our verdict: The 450D's features and handling are excellent, but its picture quality is variable. As with other EOS cameras, you need to shoot RAW files for the best definition. It's quick to blow highlight details, too, so it's important to keep a close eye on the exposure.				
Canon EOS 500D	**£520**	**APS-C, CMOS, 15.1Mp**	**www.canon.co.uk, 01737 220000**	**Issue 87**
Our verdict: Though the specification (and price) might be a bit excessive for the first-time SLR user, if you want a compact Canon with HD video and ample room to grow into, consider the 500D. Advanced beginners who can live without the HD may as well step up to the similarly priced Canon EOS 50D.				
Canon EOS 550D	**£634**	**APS-C, CMOS, 18Mp**	**www.canon.co.uk, 01737 220000**	**Issue 98**
Our verdict: Don't buy the 550D solely for its resolution, because this doesn't necessarily translate into extra real-world definition. Canon's 18-55mm kit lens is a little weak too. However, the design and handling, high ISO performance and full HD Movie mode really are exceptional.				
Canon EOS 50D	**£689**	**APS-C, CMOS, 15.1Mp**	**www.canon.co.uk, 01737 220000**	**Issue 79**
Our verdict: Canon seems to have thrown everything but the kitchen sink at the EOS 50D in a bid to re-assert itself in the semi-pro market. In doing so it's produced a great camera, and while it might not convert existing Nikon and Sony owners, it's the ideal upgrade for any Canon user.				
Canon EOS 7D	**£1,225**	**APS-C, CMOS, 18Mp**	**www.canon.co.uk, 01737 220000**	**Issue 93**
Our verdict: The 7D is incredible. Picture quality is excellent and the focus is sharp and speedy, although that's no guarantee that all your action shots will be sharp. The technology is great, but for many non-pro users the package may offer too many choices and be just a bit over-engineered.				
Canon EOS 5D Mark II	**£1,690**	**Full-frame, CMOS, 21.1Mp**	**www.canon.co.uk, 01737 220000**	**Issue 82**
Our verdict: If looks, build, design and handling were the only criteria, the EOS 5D Mark II would perhaps be the most desirable full-frame SLR of all. But the D700 and the Sony a900 are both so good for picture quality that, despite its 21 million pixels, the Canon has a real fight on its hands.				
Canon EOS-1Ds Mark IV	**£3,724**	**APS-H, CMOS, 16.1Mp**	**www.canon.co.uk, 01737 220000**	**Issue 98**
Our verdict: This is an outstanding camera with excellent performance and quality of images. Images shot at impressively high ISOs deliver well, and metering and colour rendition is accurate right out of the box. Unlikely to disappoint.				
Canon EOS-1Ds Mark III	**£5,249**	**Full-frame, CMOS, 21.1Mp**	**www.canon.co.uk, 01737 220000**	**Issue 69**
Our verdict: There's no doubt about it, Canon's EOS-1Ds was, at the time of its release, the Rolls-Royce of digital SLRs. The build quality is beyond reproach and the degree of customisation is awesome.				
NIKON				
Nikon D3000	**£299**	**APS-C, CCD, 10.2Mp**	**www.nikon.co.uk, 0800 230 220**	**Issue 91**
Our verdict: While Nikon's D3000 is certainly beginner-friendly, it's by no means perfect in that respect. Nonetheless, the camera is competitively priced, performs capably and the GUIDE mode works well.				
Nikon D5000	**£468**	**APS-C, CMOS, 12.3Mp**	**www.nikon.co.uk, 0800 230 220**	**Issue 87**
Our verdict: The D5000 is a well thought-out SLR with something for everyone. Its 720p video recording mode is not as versatile as that of Canon's 500D, but the addition of extra features, like the innovative Scene Recognition System and articulated LCD, are enough to make this a very desirable camera.				
Nikon D90	**£649**	**APS-C, CMOS, 12.3Mp**	**www.nikon.co.uk, 0800 230 220**	**Issue 79**
Our verdict: For this kind of money you can get cameras with pro levels of build quality, features and resolution. But while it's not the best in every respect, the D90 blitzes the rest overall, partly because of its huge list of features and partly because it's so consistently good at everything it does.				
Nikon D300s	**£1,138**	**APS-C, CMOS, 12.3Mp**	**www.nikon.co.uk, 0800 230 220**	**Issue 92**
Our verdict: Stills performance is outstanding – it's quite hard to take a bad picture with this camera. The camera is fast, smart and built to last, with impressive performance at higher ISOs. It's a shame the video performance is lagging behind, but if you mainly want to shoot stills, this is a great buy.				
Nikon D700	**£1,764**	**Full-frame, CMOS, 12.1Mp**	**www.nikon.co.uk, 0800 230 220**	**Issue 77**
Our verdict: The D700 is a superb professional camera, which is capable of producing some amazingly crisp, artefact-free images and has a high-ISO performance that continues to amaze. Hardcore full-frame fans might hope for a cheaper entry-point, though.				
Nikon D3s	**£3,588**	**Full-frame, CMOS, 12.1Mp**	**www.nikon.co.uk, 0800 230 220**	**Issue 95**
Our verdict: Nikon's made some important enhancements to the original D3, making it even better at high ISOs, incorporating a D-Movie mode, adding the dust-removal system, in-camera RAW processing and more. It's a refresh rather than a new camera, though, and it's been paid for with a major price hike.				
Nikon D3x	**£4,834**	**Full-frame, CMOS, 24.5Mp**	**www.nikon.co.uk, 0800 230 220**	**Issue 83**
Our verdict: This camera is designed for one purpose – high resolution at low ISO settings, and it does its job very well, but the problem with the D3x is that all of its systems are inherited from the D3. A superb camera, no doubt, but one that's already ageing.				
OLYMPUS				
Olympus E-450	**£373**	**Four Thirds, Live MOS, 10Mp**	**www.olympus.co.uk, 0800 111 4777**	**Issue 87**
Our verdict: If you want to only look at pixels, you might decide the E-450 lags behind other 10Mp D-SLRs, but that's only part of the story. This is a compact, well-featured camera with a decent kit lens, which goes well towards offsetting the smaller sensor.				
Olympus E-520	**£500***	**Four Thirds, Live MOS, 10Mp**	**www.olympus.co.uk, 0800 111 4777**	**Issue 75**
Our verdict: It's probably not going to attract a rush of existing E-510 owners into an upgrade, but the wealth of functions, the great image quality and keen pricing will surely attract plenty of first-time buyers. This is probably the best mini hatchback of the D-SLR world, producing great colour and vibrant images.				
Olympus E-620	**£499**	**Four Thirds, Live MOS, 12.3Mp**	**www.olympus.co.uk, 0800 111 4777**	**Issue 86**
Our verdict: It's tempting to focus on a specific area when reviewing cameras and overlook the rest. If the E-620 has a disadvantage compared with APS-C cameras, it's a slight one, and outweighed by its handling, controls and flexible viewing system.				
Olympus E-30	**£739**	**Four Thirds, Live MOS, 12.3Mp**	**www.olympus.co.uk, 0800 111 4777**	**Issue 83**
Our verdict: This is a great upgrade for existing Olympus E-series users. Those who are more interested in pixel peeping and cheap lenses may not like it, but if you enjoy creative photography then the Olympus E-30 is a great camera that deserves a closer inspection.				

Product	Price	Sensor type	Contact	Reviewed
Olympus E-3	**£977**	**Four Thirds, Live MOS, 10.1Mp**	**www.olympus.co.uk, 0800 111 4777**	**Issue 68**
Our verdict: Olympus did everything it possibly could to make a camera that could match the build quality and imaging performance of the much-loved E-1. In this it has succeeded by a good margin. The E-3 is rugged and a delight to shoot with.				

PENTAX

Pentax K-x	**£414**	**APS-C, CMOS, 12.4Mp**	**www.pentax.co.uk, 0870 7368299**	**Issue 94**
Our verdict: Other makers concentrate on smooth, slick, electronic finesse before hands-on photographic tools. Pentax does it the other way round. First impressions can be negative as a result, but the K-x reaffirms Pentax's forte: making gutsy, old-style SLRs.				
Pentax K-7	**£725**	**APS-C, CMOS, 14.6Mp**	**www.pentax.co.uk, 0870 7368299**	**Issue 88**
Our verdict: There is much to like and enjoy on the Pentax K-7. It's a quality product with great handling, plenty of features and it delivers image files that are capable of big prints. Its price could put off the uncommitted, but existing Pentax owners should form a queue.				

SONY

Sony Alpha a230	**£290**	**APS-C, CCD, 10.2Mp**	**www.sony.co.uk, 08700 104107**	**Issue 100**
Our verdict: Overall, the a230 is a reasonable budget-buy SLR for those who like to stick to Full Auto or Program shooting modes, but more adventurous photographers will more than likely find the camera a little too restrictive.				
Sony Alpha a380	**£439****	**APS-C, CCD, 14.2Mp**	**www.sony.co.uk, 08700 104107**	**Issue 90**
Our verdict: Ultimately, this is an entry-level camera, and as such, we think it succeeds. For the price, the Sony Alpha a380 is a great bargain, but the omission of an HD video recording function is disappointing, especially from Sony.				
Sony Alpha a450	**£480*****	**APS-C, CMOS, 14.2Mp**	**www.sony.co.uk, 08700 104107**	**Issue 100**
Our verdict: Compared with similarly priced SLRs, the a450 fails to give such satisfying results and quality is more inconsistent. Image quality is average and metering errors can be a problem – over-exposure is common.				
Sony Alpha a500	**£479**	**APS-C, CMOS, 12.3Mp**	**www.sony.co.uk, 08700 104107**	**Issue 101**
Our verdict: This 12.3Mp Sony is cheaply priced and battery life is good. The camera offers better handling than some of Sony's older D-SLRs, but the feature set is disappointingly basic and custom functions are few and far between.				
Sony Alpha a850	**£1,839**	**Full-frame, CMOS, 24.6Mp**	**www.sony.co.uk, 08700 104107**	**Issue 97**
Our verdict: The a850 is beautifully designed, and in handling terms can teach its rivals a thing or two. However, the lack of an ISO readout in the viewfinder, plus the absence of Live View, is a serious weakness. The price is attractive though.				
Sony Alpha a900	**£1,998**	**Full-frame, CMOS, 24.6Mp**	**www.sony.co.uk, 08700 104107**	**Issue 80**
Our verdict: Sony's done an extraordinary job in getting such a good full-frame D-SLR to the market. But while its Canon and Nikon rivals ooze class, the a900 still has a few rough edges and Sony's yet to prove it can match Nikon and Canon's pro lenses.				

MICRO FOUR THIRDS AND HYBRID CAMERAS

OLYMPUS

Olympus E-P1	**£485**	**Four Thirds, Live MOS, 12.3Mp**	**www.olympus.co.uk, 0800 111 4777**	**Issue 90**
Our verdict: The E-P1 is an unusual camera with undeniable appeal but rather too many flaws. And if it's serious about prising open a Micro Four Thirds-sized gap in the digital camera market, this seems a pretty odd camera to do it with.				
Olympus E-P2	**£744**	**Four Thirds, Live MOS, 12.3Mp**	**www.olympus.co.uk, 0800 111 4777**	**Issue 97**
Our verdict: The PEN E-P2 is a huge improvement on its predecessor, thanks to its excellent electronic viewfinder. This alone makes it a much more viable alternative to a conventional D-SLR. The lack of built-in flash, however, is a serious weakness – and one that you can't correct without then losing the viewfinder.				

PANASONIC

Panasonic G1	**£440*****	**Four Thirds, Live MOS, 12.1Mp**	**www.panasonic.co.uk, 0844 844 3852**	**Issue 81**
Our verdict: The G1 impresses with its very good electronic viewfinder, lightning-fast AF, excellent lens and strong, natural colour rendition. But after a while you may find yourself hankering after the simplicity and clarity of an old-fashioned optical viewfinder, and a smaller and simpler set of controls.				
Panasonic G2	**£540**	**Four Thirds, Live MOS, 12.1Mp**	**www.panasonic.co.uk, 0844 844 3852**	**Issue 101**
Our verdict: Priced keenly for a so-called HD-SLR – but refusing to skimp in other areas. The rotating, touch-control screen is a luxury feature. The sticking point is the camera system. Lenses for Four Thirds mounts are still thin on the ground, so this isn't a camera we'd recommend, say, for the wildlife or sports photographer.				
Panasonic GF1	**£439**	**Four Thirds, Live MOS, 12.1Mp**	**www.panasonic.co.uk, 0844 844 3852**	**Issue 99**
Our verdict: With its sleek design, outstanding lens quality and handy creative modes, the GF1 is a force to be reckoned with. It's ideal for beginners with its simple-to-use functions, and perfect for pros who want a small compact body to fit in their bag as a back-up.				
Panasonic GH1	**£899**	**Four Thirds, Live MOS, 12.1Mp**	**www.panasonic.co.uk, 0844 844 3852**	**Issue 89**
Our verdict: Despite solid all-round picture quality and a wealth of features, the GH1 costs more than double the price of the original G1 package. For the same money or less, you can get a 'full size' D-SLR like the Canon 500D or Nikon D90, complete with superzoom lens.				

SAMSUNG

Samsung NX10	**£474****	**APS-C, CMOS, 14.6Mp**	**www.samsungcamera.co.uk, 0845 67267864**	**Issue 100**
Our verdict: The NX10 is an impressive camera. Colour quibbles aside, it delivers a level of image quality you wouldn't expect at this price, thanks mostly to its first-rate kit lens. However, an articulating LCD would make it even better and, small as it is, the NX10 is still closer in size to an SLR than a compact.				

SONY

Sony NEX-5	**£600******	**APS-C, CMOS, 14.2Mp**	**www.sony.co.uk, 08700 104107**	**Issue 102**
Our verdict: This camera is a great achievement in so many ways, but it's also a disappointment in others. Sony has spent so much time developing clever features and fancy technology that usability seems to have taken a back seat.				

Three of the best cameras for travel photography



Canon 5D Mk II
Price: £1,690
Contact: www.canon.co.uk, 01737 220000
Reviewed: Issue 82



Nikon D700
Price: £1,757
Contact: www.nikon.co.uk, 0800 230 220
Reviewed: Issue 77



Panasonic G2
Price: £540
Contact: www.panasonic.co.uk, 0844 844 3852
Reviewed: Issue 101

Money to burn?

Prime lenses

After a fast fixed-length lens for great portraits? Then try one of these...



Nikon AF-S 50mm f/1.4G
Price: £280
Contact: www.nikon.co.uk, 0800 230 220
Reviewed: Issue 95
Our verdict: Despite the AF-S 50mm being the cheapest prime lens in our recent group test, the Nikon's natural handling and image quality are simply staggering. Sharpness is also great across the frame, even when wide open at f/1.4.



Sigma 50mm f/1.4 EX DG HSM
Price: £359
Contact: www.sigma-imaging-uk.com, 01707 329999
Reviewed: Issue 95
Our verdict: This lens is relatively pricey, looks and feels serious, and is sharp, even at its maximum aperture of f/1.4. Distortion is minimal and overall optical quality is high.



Sony 50mm f/1.4 AF
Price: £282
Contact: www.sony.co.uk, 08700 104107
Reviewed: Issue 95
Our verdict: Don't be fooled by the compact dimensions and light weight; images taken with the Sony are sharp and full of contrast, and you'll notice a big difference from zoom lenses. It might look humble, but this is a great prime buy.

* Includes 14-42mm kit lens ** includes 18-55mm kit lens *** including 14-45mm kit lens **** including 18-55mm kit lens
All prices body only unless otherwise stated. Prices are street prices, based on prices sourced from a selection of well-known retailers at the time of going to press, and correct at the time of going to press.

CAMERA BAG SPY

WE TAKE YOU INSIDE A TOP P... TBAG

As top landscape and nature photographer **Adam Burton** reveals, you don't need to pack tons of gear to get winning images...



PHILIPS LAPTOP
It's small and easy to carry with me on location, and I mainly use it for backing up my photos. I edit shots with Photoshop CS3 and Lightroom 2.

2.0x EXTENDERS
These extenders offer a lighter and more convenient way to extend the reach of my 70-200mm lens – and they're cheaper than a monster zoom.

TELEPHOTO LENS
Canon's EF 70-200mm f/4L is a great landscape lens – perfect for compressing a misty scene taken from a hilltop. It's sharp and light.

MID-RANGE LENS
Canon's EF 24-70mm f/2.8 L-series lens gives top quality at mid-range focal lengths. It's a real cracker and a top buy for keen landscapers.

ORDNANCE SURVEY MAPS
I'm completely lost without OS maps – you'll always miss important landmarks or contours if you don't take one with you on landscape shoots.

CARBON-FIBRE TRIPOD
My Manfrotto Magfiber MF4 tripod is light, sturdy and sea-proof, so it's perfect in any terrain. I use it with the M/322 RC2 head.

LEE FILTERS
I mainly use the ND grad filter to balance exposure and the polariser to saturate colours. It's large enough to avoid vignetting on wide-angle shots.

MAIN D-SLR
I use Canon's full-frame, 21Mp 1Ds Mark III. I can offer clients large, high-quality files, and it's very durable. On it is my main lens, a 16-35mm f/2.8L II.

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NEX generation

ultra-compact system cameras from londoncameraexchange

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SONY αNEX-5



The new ultra-compact Sony NEX-series interchangeable lens cameras offer DSLR-style imaging performance in a light, stylish camera that's beautifully easy to use. Amazing quality you can take everywhere!

- Stunning DSLR-quality images from the 14.2 megapixels Exmor APS HD CMOS sensor
- Interchangeable lenses plus compatibility with α lens family
- Smart features like AVCHD Full HD 1920x1080i video shooting and 3D Sweep Panorama
- 7.5cm/3" tilt-angle TruBlack LCD
- Magnesium body

Sony NEX-5 & 16mm f/2.8 Pancake lens
Available in Black or Silver finish

£549.99

Also available:
NEX-5 & 18-55mm f/3.5-5.6 lens
£589.99

NEX-5, 16 f/2.8 Pancake **& 18-55mm** f/3.5-5.6 lenses
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part exchange welcome

SONY αNEX-3



Compact, beautifully styled and brilliantly easy to use.

- Stunning DSLR-quality images from the 14.2 megapixels Exmor APS HD CMOS sensor
- Interchangeable lenses plus compatibility with α lens family
- MPEG4 720p video shooting and 3D Sweep Panorama
- 7.5cm/3" tilt-angle TruBlack LCD

Available in Black, Red or Silver finish

new

NEX-3 & 16mm f/2.8 Pancake **£449.99**
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NEX Accessories

VCL-ECU1 Ultra-wide angle converter for 16mm Pancake lens **£119.99**
VCL-ECF1 Fish-eye converter for 16mm Pancake lens **£119.99**
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Paignton 71 Hyde Road **Tel: 01803 553077**
Plymouth 10 Frankfort Gate **Tel: 01752 664894**
Portsmouth Cascades Centre **Tel: 023 92839933**
Reading 7 Station Road **Tel: 0118 9592149**
Salisbury 6 Queen Street **Tel: 01722 335436**
Southampton 10 High Street **Tel: 023 8022 1597**
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Canon EOS 1000D



10.1 MEGAPIXELS

Body Only	£319.99
Inc. 18-55mm	£369.00

KEY ACCESSORIES

Canon LP-E5 Battery.....£44.99
Canon BG-E5 Grip.....£119.99
Canon 60-E3 Remote Switch..... £24.99

Canon EOS 500D



15.1 MEGAPIXELS

Body Only	£529.99
Inc. 18-55mmIS	£590.00

KEY ACCESSORIES

Canon LP-E5 Battery.....£44.99
Canon BG-E5 Grip.....£119.99
Canon 60-E3 Remote Switch..... £24.99

Canon EOS 550D

- 18 Megapixels
- C-MOS Sensor
- Live View
- HD Video Mode
- ISO 12800
- 3.7 fps



18.0 MEGAPIXELS

EOS 550D Body Only	£643.00
EOS 550D inc. 18-55mmIS	£749.99
EOS 550D inc. 18-135mmIS	£899.99

KEY ACCESSORIES

Canon LP-E8 Battery.....£49.99
Canon BG-E8 Grip.....£149.99
Hama 60-E3 Remote Switch.....£20.99



Canon EOS 50D



15.1 MEGAPIXELS

Body Only	£689.00
Inc.17-85mmIS	£979.00
Inc.18-200mmIS	£999.00

KEY ACCESSORIES

Canon BP-511A Battery.....£99.99
Canon BG-E2N Grip.....£149.99
Canon 80-N3 Remote Switch.....£45.99

Canon EOS 7D



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18.0 MEGAPIXELS

Body Only	£1249.00
Inc. 18-135mm	£1462.00

KEY ACCESSORIES

Canon LP-E6 Battery.....£79.99
Canon BG-E7 Grip.....£149.99
Canon WFT-E5B Transmitter.....£449.99

Canon EOS Professional

EOS 5D MkII

- 21.1 Megapixels
- 1:1 CMOS Sensor
- Live View
- HD Video Mode
- ISO 25600
- 3.9 fps

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21.1 MEGAPIXELS

EOS 5D MkII Body Only	£1694.99
EOS 5D MkII inc. 24-70mm	£2598.00
EOS 5D MkII inc. 24-105mm L IS USM	£2327.00

KEY ACCESSORIES

Canon LP-E6 Battery.....£229.99
Canon BG-E6 Grip.....£49.99
Canon 80-N3 Remote Switch.....£45.99



EOS 1D MkIV



16.1 MEGAPIXELS

- HD Video Mode • Live View
- ISO 102400 • 10 fps

Body Only	£3723.00

KEY ACCESSORIES

Canon LP-E4 Battery.....£129.99
Canon WFT-E2 II Transmitter.....£599.99
Canon 80-N3 Remote Switch.....£45.99

EOS 1Ds MkIII



21.1 MEGAPIXELS

- Full Frame CMOS Sensor
- ISO 1600 • 5 fps

Body Only	£5299.99

KEY ACCESSORIES

Canon LP-E4 Battery.....£129.99
Canon WFT-E2 II Transmitter.....£599.99
Canon 80-N3 Remote Switch.....£45.99

CANON EF LENSES
(**USM** - Ultra fast near silent operation. **IS** - Image Stabiliser to reduce camera shake. **L** - All weather professional lens with ultimate performance)

EF 16-35mm f4 L USM	£1199.99
EF 17-40mm f4 L IS USM	£639.00
EF 24-105mm f2.8 L USM	£939.00
EF 24-70mm f2.8 L USM	£1021.99
EF 28-135mm f3.5-5.6 IS USM	£371.99
EF 28-200mm f3.5-5.6 USM	£299.97
EF 28-300mm f3.5-5.6 L IS USM	£2259.00
EF 55-200mm f4.5-5.6 USM II	£245.99
EF 70-200mm f4 L IS USM	£919.99
EF 70-300mm f4-5.6 USM IS	£428.99
EF 70-300mm f4.5-5.6 DO IS USM	£1136.99
EF 75-300mm f4-5.6 USM III	£249.00
EF 100-400mm f4.5-5.6 L IS USM	£1269.00
EF 14mm f2.8 L USM II	£1799.99
EF 15mm f2.8 Fisheye	£619.99
EF 20mm f2.8 USM	£422.99
EF 24mm f1.4 L USM IS	£1379.99
EF 24mm f2.8	£382.99
EF 28mm f1.8 USM	£385.00





EF 28mm f2.8	£169.99
EF 35mm f1.4 L USM	£1179.99
EF 35mm f2	£229.97
EF 50mm f1.8 II	£94.00
EF 50mm f1.4 USM	£299.00
EF 50mm f1.2 L USM	£1306.99
EF 85mm f1.8 USM	£319.99
EF 85mm f1.2 L USM II	£1827.99
EF 100mm f2 USM	£387.99
EF 135mm f2 L USM	£933.99
EF 200mm f2 L IS USM	£4954.99
EF 200mm f2.8 L USM II	£652.99
EF 300mm f2.8L IS USM	£3884.00
EF 300mm f4 L IS USM	£1173.99
EF 400mm f2.8 L IS USM	£6665.00
EF 400mm f4 DO IS USM	£5589.00
EF 400mm f5.6 L USM	£1122.99
EF 500mm f4 L IS USM	£5398.99
EF 600mm f4 L IS USM	£7406.99
EF 800mm f5.6 L IS USM	£10,199.







EF-S 15-85mm f3.5-5.6 IS USM	£664.99
EF-S 10-22mm f3.5-4.5 USM	£653.99
EF-S 17-55mm f2.8 IS USM	£811.99
EF-S 17-85mm f4-5.6 IS USM	£389.99
EF-S 18-55mm f3.5-5.6 IS	£169.00
EF-S 18-135mm f3.5-5.6 IS	£359.99
EF-S 18-200mm f3.5-5.6 IS	£439.99
EF-S 55-250mm f4-5.6 IS USM	£229.00
EF-S 60mm f2.8 Macro USM	£356.00
EF 50mm f2.5 Macro	£233.99
MP-E 65mm f2.8 Macro	£868.99
EF 100mm f2.8 L Macro USM	£439.99
EF 100mm f2.8 L Macro IS USM	£799.99
EF 180mm f3.5L Macro USM	£1278.00
TS-E 17mm f4 L	£2043.99
TS-E 24mm f3.5 L	£1839.99
TS-E 45mm f2.8	£1117.99
TS-E 90mm f2.8	£1139.99
EF 1.4x II Extender (L lenses)	£289.00
EF 2x II Extender (L lenses)	£289.00

CANON ACCESSORIES

BATTERY GRIPS

EOS 500D/450D/1000D
Canon BG-E5.....£119.99

EOS 50D
Canon BG-E2N.....£149.99

EOS 5D MKII
Canon BG-E6.....£229.99

EOS 7D
Canon BG-E7.....£149.99

EOS 550D
Canon BG-E8.....£149.99



WIRELESS

EOS 1DMKIV/1DSMKIII
Canon WFT-E2 II.....£599.99

EOS 50D
Canon WFT-E3.....£799.99

EOS 5D MKII
Canon WFT-E4.....£749.99

EOS 7D
Canon WFT-E5.....£449.99

WIRED/ IR

EOS 1D/1Ds/5DMkII/50D
Canon Remote Switch 80N3.....£45.99
Hama Remote Switch 80N3.....£29.99
Canon Remote Switch TC80N3..£149.99

EOS 500D/550D/1000D
Canon Remote Switch 60E3.....£24.99
Hama Remote Switch 60E3.....£20.99
Canon Remote Control IR RC5.....£19.97



BATTERIES

EOS 500D/450D/1000D
Canon LP-E5.....£49.99
Energizer LP-E5.....£29.99
Hahnel LP-E5.....£29.99

EOS 550D
Canon LP-E8.....£49.99

EOS 50D
Canon BP-511A.....£99.99
Energizer BP-511.....£29.99
Hahnel BP-511.....£29.99

EOS 5D MKII/7D
Canon LP-E6.....£79.99
Hahnel LP-E6.....£59.99

EOS 1DS MKIII/1DMKIV
Canon LP-E4.....£129.99

HAHNEL PRO WIRELESS

Hahnel Wireless Remote (EOS).....£48.99

PocketWizard
Flex TT5 (EOS).....£229.99
Mini TT1 (EOS).....£209.99

QUANTUM
FreeXWire Canon TTL Adapter.....£81.99

CANON SPEEDLITES



270EX Speedlite	430EXII Speedlite	580EXII Speedlite	MR14EX Macrolite	MT24EX Macrolite
£107.99	£214.00	£374.00	£489.00	£799.00

GRIPS FLASH ACCESSORIES

Canon OC-E3 Off Camera Shoe Cord.....£59.99
Canon STE-2 Signal Transmitter.....£179.99
Canon SB-E2 Flash Unit Bracket.....£229.99

STOFEN OMNI BOUNCE FLASH DIFFUSER
OM-EW (430EX).....£17.99
OM-EY (580EX).....£17.99
OM-24X (MT24EX).....£25.99

MARUMI RING FLASH
DRF 14C.....£132.99

NISSIN FLASH
Di866..£259.99 Di622..£119.99



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Nikon D3000



10.2 MEGAPIXELS

Body Only £299.00
Inc. 18-55mmVR £345.00

KEY ACCESSORIES
Nikon EN-EL9a Battery..... ..£55.99
Nikon ML-L3 Remote Control... £19.99
Nikon EH-5AC Adaptor..... ...£99.99

Nikon D5000

- 12.3 Megapixels
- 1.5x CMOS Sensor
- Live View
- Anti Dust Feature
- HD Video Mode
- ISO 3200
- 4.0 fps



12.3 MEGAPIXELS

D5000 Body Only £469.99
D5000 inc. 18-55mmVR £479.00
D5000 inc. 18-55 & 55-200mmVR £699.99

KEY ACCESSORIES
Nikon EN-EL9a Battery.....£55.99
Nikon MC-DC2 Remote Cord.....£26.99
Nikon DK-24 Eyecup.....£5.99



Nikon D300S

- 12.3 Megapixels
- 1.5x CMOS Sensor
- Live View
- Anti Dust Feature
- HD Video Mode
- ISO 6400
- 7.0 fps



12.3 MEGAPIXELS

D300S Body Only £1139.00

KEY ACCESSORIES
Nikon EN-EL3e Battery.....£66.99
Nikon MB-D10 Grip.....£249.99
Nikon EH-5AC Adapter.....£99.99



Nikon D90



12.3 MEGAPIXELS

Body Only £628.00
Inc. 18-105mm £779.00

KEY ACCESSORIES
Nikon EN-EL3e Battery.....£66.99
Nikon MB-D80 Grip.....£149.99
Nikon ML-L3 Remote Control.....£19.99

Nikon Professional

D700

FREE MB-10 GRIP ENDS 31/8/10 SEE WEB



12.1 MEGAPIXELS

Body Only £1764.00

KEY ACCESSORIES
Nikon EN-EL3e Battery.....£66.99
Nikon MB-D10 Grip.....£249.99
Nikon WT4 Transmitter.....£599.97

D3S

- 12.1 Megapixels
- 1:1 CMOS Sensor
- Live View
- Anti Dust Feature
- HD Video Mode
- ISO 102400



12.1 MEGAPIXELS

D3S Body Only £3589.00

KEY ACCESSORIES
Nikon EN-EL4a Battery.....£119.99
Nikon EH-6AC Adapter.....£99.99
Nikon WT4 Transmitter.....£599.97



D3X



24.5 MEGAPIXELS

Body Only £4798.00

KEY ACCESSORIES
Nikon EN-EL4a Battery.....£119.99
Nikon EH-6AC Adapter.....£99.99
Nikon WT4 Transmitter.....£599.97

NIKON ACCESSORIES

GRIPS
D80/ D90
Nikon MB-D80 .....£149.99
Hahnel MB-D80.....£99.99
D300/D300s/D700
Nikon MB-D10.....£249.99
Hahnel MB-D300.....£129.99



BATTERIES


D60/ D5000
Nikon EN-EL9a.....£55.99
Energizer EN-EL9.....£39.99
Hahnel EN-EL9.....£39.99
D90/D300/D300s/D700
Nikon EN-EL3e.....£66.99
Energizer EN-EL3e...£40.99
Hahnel EN-EL3e.....£40.99
D3/D3x
Nikon EN-EL4a.....£119.99

WIRELESS
D300/D700/D3/D3x
Nikon WT-4.....£599.97



HAHNEL PRO WIRELESS
Hahnel Wireless Remote (NIK).....£48.99

WIRED/ IR
D300/D700/D3
Nikon Remote Cord MC-30.....£59.99
Hama Remote Cord MC30.....£40.99
D90/D5000
Nikon Remote Cord MC-DC2.....£129.99
D80/D70s
Hama Remote Cord MC-DC1.....£20.99
D40/D60
Nikon Remote Control ML-L3 IR.....£19.99

QUANTUM
FreeXWire Nikon TTL Adapter £66.99



Fire flash units & cameras up to hundreds of feet away.

NIKON SPEEDLITES



SB400 Speedlite	SB600 Speedlite	SB900 Speedlite
£127.99	£229.00	£325.99

NISSIN SPEEDLITES



Di622 Speedlite	Di866 Speedlite
£119.99	£259.99

FLASH ACCESSORIES

Nikon SB Commander Kit R1C1.....£599.99
Nikon SB Remote Kit R1.....£408.99
Nikon AS19 Stand for Nikon SB800.....£6.99
Quantum CKE for Nikon SB28.....£45.99

STOFEN OMNI BOUNCE FLASH DIFFUSER
OM-SB5 (SB800).....£17.99
OM-600 (SB600).....£17.99
MARUMI RING FLASH
DRF 14N.....£132.99



NIKON LENSES

(**DX** - for Nikon DX SLR's. **VR** - Reduces image blur. **AF-S** - Lightening quick with whisper quiet focusing. **ED** - Helps reduce chromatic aberration)

14-24mm f2.8 AF-S G ED	£1296.99
18-35mm f3.5-4.5 D IF-ED	£505.99
24-85mm f2.8-4 D IF	£520.99
24-120mm f3.5-5.6 G AF-S VR	£541.99
24-70mm f2.8 G AF-S ED	£1190.00
70-200mm f2.8 G AF-S VR II IF-ED	£1647.00
70-300mm f34.5-5.6 G AF-S VR IF-ED	£419.00
80-400mm f4.5-5.6 D VR ED	£1169.99
200-400mm f4 G AF-S VR IF-ED II	£6249.99
14mm f2.8 D ED	£1199.99
16mm f23.8 D Fisheye	£598.99
20mm f2.8 D	£463.99
24mm f2.8 D	£331.99
28mm f2.8 D	£218.99
35mm f2 D	£254.99
50mm f1.8 D	£107.99





50mm f1.4 D	£229.00
50mm f1.4 G AF-S	£299.99
85mm f1.4 D	£887.99
85mm f1.8 D	£305.99
105mm f2 D DC	£806.99
135mm f2 D DC	£959.99
180mm f2.8 D IF-ED	£622.99
200mm f2 G AF-S VR IF-ED	£3114.99
300mm f2.8 AF-S VR IF-ED II	£4299.00
300mm f4 D AF-S IF-ED	£968.99
400mm f2.8 G AF-S VR ED	£6499.00
500mm f4 G AF-S VR ED	£5742.99
600mm f4 G AF-S VR ED	£6927.99
10.5mm f2.8 DX G ED	£521.99
35mm f1.8 DX G AF-S	£169.00
10-24mm f3.5-4.5 DX G AF-S ED	£599.99







12-24mm f4 DX G IF	£812.99
16-85mm f3.5-5.6 DX G AF-S VR	£444.00
17-55mm f2.8 DX AFS IF-ED	£1049.99
18-105mm f3.5-5.6 DX G VR ED	£245.99
18-200mm f3.5-5.6 DXGAF-S VRII IFED	£579.00
55-200mm f4-5.6 DX AF-S VR IF-ED	£249.00
55-200mm f4-5.6 DX AFS ED	£182.99
200-400mm f4G IF ED AF-S VR NEW!	£4729.99
60mm f2.8 G AF-S ED Micro	£398.99
85mm f3.5 G AF-S DX Micro	£449.99
105mm f2.8 G AF-S VR IF-ED Micro	£614.99
200mm f4 IF-ED Micro	£1112.99
PC-E 24mm f3.56 D ED	£1373.99
PC-E 45mm f2.8 D ED	£1430.99
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TC-17E II AF-S Teleconverter	£304.99
TC-20E III Teleconverter	£399.99

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20mm f2.8	£449.99
28mm f2.8	£189.99
35mm f1.4G	£1099.99
50mm f1.8	£139.99
50mm f1.4	£229.99
50mm f2.8 Macro	£429.99
100mm f2.8 Macro	£529.99
11-18mm f4.5-5.6 DT	£499.99
16-105mm f3.5-5.6 DT	£449.99
18-200mm f3.5-5.6 DT	£429.97
18-250mm f3.5-5.6 DT	£449.99
55-200mm f4-5.6 DT	£162.99
70-200mm f2.8 G	£1475.99
70-300mm f4.5-5.6 SSM G	£699.99
75-300mm	£199.99

2010 TIPA: 28-75mm f2.8 SAM £599.99
2009 TIPA: 70-400mm f4-5.6 SSM £1299.99

SONY Alpha A230



10.2 MEGAPIXELS

Inc.18-55mm & 55-200mm £399.99

KEY ACCESSORIES
Sony NP FH-50 Battery.....£61.99
Hama Remote Switch.....£25.99
Sony FAST1AM Adapter... £153.99

SONY Alpha A380



14.2 MEGAPIXELS

Inc.18-55mm & 55-200mm £599.97

KEY ACCESSORIES
Sony NP FH-50 Battery.....£61.99
Hama Remote Switch.....£25.99
Sony FAST1AM Adapter... £153.99

PENTAX

PENTAX LENSES

10-17mm f3.5-4.5 DA Fisheye	£428.98
12-24mm f4 DA	£794.98
16-50mm f2.8 ED ALIF SDM	£693.99
17-70mm f4 SDM DA	£464.98
50-200mm f4-5.6 ED DA	£229.99
55-300mm f4-5.8 ED DA	£269.99
14mm f2.8 DA ED IF	£539.00
50mm f2.8 Macro	£404.99
55mm f1.4 SDM	£649.99
100mm f2.8 Macro	£479.97

PENTAX FLASH
Pentax AF200FG.....£179.99
Pentax AF360FGZ.....£399.99
Pentax AF540FGZ.....£549.99

PENTAX K-x

2010 TIPA



12.4 MEGAPIXELS

Inc.18-55mm £429.00
Inc.18-55 & 55-300mm £568.00

KEY ACCESSORIES
Energizer AA Batteries.....£7.99
Pentax Remote Control F.....£21.99

PENTAX K-7

Gear Year Winner



14.6 MEGAPIXELS

Inc.18-55mm £829.00
Inc.18-55 & 50-200mm £929.00

KEY ACCESSORIES
Pentax D-LI90 Battery.....£64.99
Pentax D-BG4 Grip.....£249.99
Pentax Remote Control F.....£21.99

COMPACT SYSTEM CAMERAS

Smaller than a DSLR but more powerful & Creative than a compact.

SONY ALPHA NEX-3



NEW!

SONY ALPHA NEX AVAILABLE IN STORE ONLY.

Inc.16mm £449.00
Inc.18-55mm £489.00
Inc.16 & 18-55 £579.00

KEY ACCESSORIES
Sony NP-FW50 Battery.....£59.99
Sony Case.....£52.99
Sony Fisheye Converter.... £124.99

SONY ALPHA NEX-5



NEX 3 - BLACK, SILVER OR RED
NEX 5 - BLACK, OR SILVER

- Interchangeable Lenses
- Sweep Panorama (3D available in Firmware upgrade)
- HD Video Mode
- 3" Vari Angle LCD Screen
- Includes External Flash

Inc.16mm £549.00
Inc.18-55mm £589.00
Inc.18-200mm £999.00

KEY ACCESSORIES
Sony NP-FW50 Battery
Sony Case.....£52.99
Sony Fisheye Converter..... £124.99

LEICA M9

2010 TIPA

- 18 Megapixels
- 1.5x CCD Sensor
- Rangefinder
- ISO 2500
- 2 fps



18.0 MEGAPIXELS

Body Only Steel Grey or Black £4955.99

KEY ACCESSORIES
Leica Lithium-ion Battery..... £71.99
Leica SF24D Flash..... £264.99
Leica SF58D Flash..... £539.99

LEICA LENSES

21mm f2.8 Elmarit-M ASPH	£2755.99
24mm f2.8 Elmarit-M ASPH	£2525.99
28mm f2.8 Elmarit-M ASPH	£1293.99
35mm f2.0 Summicron-M ASPH	£1862.99
50mm f1.4 Summilux-M ASPH	£2254.99
50mm f2.5 Summarit-M	£887.99
75mm f2.0 Summicron-M ASPH	£2105.99
90mm f2.5 Summarit-M	£1095.99

SAMSUNG NX10



14.6 MEGAPIXELS

Inc.18-55mm £399.99
Inc.18-55mm & 50-200mm £529.99

KEY ACCESSORIES
Samsung BP1310 Battery.....£27.99
Samsung SEF20A Grip.....£105.99
Samsung SR9NX01 Shutter.....£14.99

OLYMPUS PEN

ACCESSORY PORT
Olympus Viewfinder - 2.....£261.99
Olympus Viewfinder -1.....£102.99
Olympus Microphone Set

PEN FLASH SYSTEM



Olympus FL-14 Flash.....£159.99



Viewfinder
Leather Body Jackets

OLYMPUS PEN LENSES

M ZUIKO Digital ED 9-18mm f4-5.6	£499.97
M ZUIKO Digital ED 14-42mm f3.5-5.6	£224.99
M ZUIKO Digital ED 17mm f2.8 Pancake	£296.99

PEN ADAPTERS

MMF-1 Adapter	£99.99
MF-2 Adapter	£149.99



17mm f2.8 Pancake

OLYMPUS E-PL1

2010 TIPA

- 12.3
- 2x L-MOS
- Live View
- HD Video
- ISO 6400
- Art Filters

*INC. £75 CASHBACK ENDS 30/9/10



12.3 MEGAPIXELS

Inc.14-42mm £424.99*

KEY ACCESSORIES
Olympus PS-BLS1 Battery.....£43.99
Olympus Leather Body Jacket (brown or white leather).....£69.99

OLYMPUS E-P2



• HD Video • Live View
• Art Filters • ISO 6400
12.3 MEGAPIXELS

Inc.14-42mm £840.99
Inc.17mm £887.99

KEY ACCESSORIES
Olympus PS-BLS1 Battery.....£43.99
Olympus Leather Body Jacket.....£69.99

OLYMPUS E-P1 Inc.17mm Silver



SPECIAL OFFER ONLY £399.00! WHILE STOCKS LAST

• HD Video • Live View
• Art Filters • ISO 6400
12.3 MEGAPIXELS

Inc.17mm f2.8 Pancake & Viewfinder £399.00
HALF PRICE! WAS: £799.99

KEY ACCESSORIES
Olympus PS-BLS1 Battery.....£43.99
Olympus Leather Body Jacket.....£69.99

Panasonic

PANASONIC LENSES

Claim up to £50 Cashback direct from Panasonic. Valid until 31st August 2010.

7-14mm f4 Vario G ASPH *INC. £50 CASHBACK	£949.99*
14-140mm f4-5.6 Vario G HD *INC. £30 CASHBACK	£669.99*
45-200mm f4-5.6 G ASPH	£279.99
20mm f1.7 G ASPH	£279.99
45mm f2.8 ASPH *INC. £30 CASHBACK	£614.99*

PANASONIC FLASH
Panasonic DMW-FL28.....£102.99
Panasonic DMW-FL220.....£148.99
Panasonic DMW-FL360.....£204.99

Panasonic Lumix G10

- 12.1 Megapixels
- L-MOS Sensor
- Live View
- HD Video Mode
- Dust Reduction



3YEAR WARRANTY† ENDS 31/8/10

12.1 MEGAPIXELS

Inc.14-42mm £459.00

KEY ACCESSORIES
Panasonic DMW-BLB13E Battery..... £64.99
Panasonic DMW-LVF1 View Finder... £169.99
Panasonic DMW-FL220 Flashgun..... £148.99



BLB13E Battery
LVF1 Viewfinder

Panasonic Lumix GF1



3YEAR WARRANTY† ENDS 31/8/10

12.1 MEGAPIXELS

Inc.20mm £629.00
Inc.14-45mm £549.00

KEY ACCESSORIES
DMW-BLB13E Battery..... £64.99
DMW-LVF1 View Finder... £169.99
DMW-FL220 Flashgun..... £148.99

Panasonic Lumix G2

2010 TIPA

*INC. £30 CASHBACK ENDS 31/8/10



3YEAR WARRANTY† ENDS 31/8/10

12.1 MEGAPIXELS

Inc.14-42mm £569.00*
Inc.14-42 & 45-200mm £799.00*

KEY ACCESSORIES
DMW-BLB13E Battery..... £64.99
DMW-LVF1 View Finder... £169.99
DMW-FL220 Flashgun..... £148.99

Panasonic Lumix GH1

2009 TIPA

*INC. £75 CASHBACK ENDS 31/8/10



3YEAR WARRANTY† ENDS 31/8/10

12.1 MEGAPIXELS

Inc.14-140mm £824.00*

KEY ACCESSORIES
DMW-BLB13E Battery..... £64.99
DMW-LVF1 View Finder... £169.99
DMW-FL220 Flashgun..... £148.99

† 3 Year Warranty to be claimed direct from Panasonic. Offer valid on in store purchases only. Valid from 20th May 2010 - 31st August 2010.

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LENSES (available in different fits)

SIGMA



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4.5mm f2.8 EX HSM DC Circ Fisheye	£589.99
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10-20mm f4-5.6 EX DC HSM ASP IF	£399.99
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17-70mm f2.8-4.5 DC ASP IF	£336.99
18-50mm f3.5-5.6 DC ASP	£77.99
18-50mm f2.8-4.5 DC HSM IF OS	£183.99
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18-125mm f3.8-5.6 DC HSM IF OS	£267.99
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18-200mm f3.5-6.3 DC ASP IF OS	£289.99
18-250mm f3.5-6.3 DC ASP IF OS	£399.99
50-150mm f2.8 EX DC HSM APO IF II	£589.99









Prime Lenses

8mm f3.5 EX Circ Fisheye DG	£631.99
15mm f2.8 EX Fisheye DG	£505.99
20mm f1.8 EX DG ASP RF	£505.99
24mm f1.8 EX DG ASP	£420.99
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50mm f1.4 EX DG HSM	£379.99
85mm f1.4 EX DG HSM NEW!	£699.99
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Macro

50mm f2.8 EX DG Macro	£255.99
70mm f2.8 EX DG Macro	£389.99
105mm f2.8 EX DG Macro	£402.99
150mm f2.8EX DG HSM APO IF Macro	£589.99



Teleconverters

1.4x Converter EX DG APO	£247.99
2x Converter EX DG APO	£301.99

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12-24mm f4.5-5.6 EX DG HSM ASP IF	£715.99
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TAMRON

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18-270mm f3.5-6.3 Di II VC LD ASP IF	£399.99
55-200mm f4-5.6 Di II LD	£115.00

Zoom Lenses

28-75mm f2.8 XR Di LD ASP IF	£359.00
28-300mm f3.5-6.3 XR Di ASP IF	£299.00
28-300mm f3.5-6.3 XR Di VC LD ASP IF	£499.99
70-200mm f2.8 Di LD IF	£619.00
70-300mm f4.5-5.6 Di LD	£139.00
200-500mm f5-6.3 Di LD IF	£869.00

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60mm f2 Macro Di	£389.99
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180mm f3.5 Macro Di LD	£699.00



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Lens Pouch S.....£9.99
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Lens Pouch L.....£12.99

Domke
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19" Wrap.....£18.99

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Lens Case 2/ 2s.....£17.99
Lens Case 3.....£19.99
Lens Case 4/ 4s.....£26.99
Lens Case 5/ 5s.....£44.99

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AF 12-24mm f4 AT-X 124 Pro DXII	£574.99
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AF 50-135mm f2.8 AT-X 535 Pro DX	£649.99
AF 80-400mm f4.5-5.6 AT-X 840D	£649.99
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AF 100mm f2.8 Macro AT-X 100 AF Pro D	£399.99

FILTERS PROTECT YOUR INVESTMENT! Protect your lens from grit and scratches.

HOYA

37mm UV HMC	£19.99
37mm Circular Polar	£39.99
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52mm UV	£19.99
55mm Circular Polar	£44.99
55mm UV	£21.99
58mm Circular Polar	£49.99
58mm UV	£24.99
62mm Circular Polar	£69.99
62mm UV	£24.99
67mm Circ.Polariser	£79.99
67mm UV	£29.99
72mm Circular Polariser	£84.99
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Hoya HD
Multi-coated surface with high transparency polarising film. Waterproof to repel water spots and hardened to be scratch & stain resistant.

HD 58mm Protector	£49.99
HD 58mm UV	£49.99
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HD 62mm Protector	£59.99
HD 62mm UV	£59.99
HD 62mm PL-CIRC	£109.99
HD 67mm Protector	£64.99
HD 67mm UV	£64.99
HD 67mm PL-CIRC	£134.99
HD 72mm Protector	£74.99
HD 72mm UV	£74.99
HD 72mm PL-CIRC	£169.99
HD 77mm Protector	£94.99
HD 77mm UV	£94.99
HD 77mm PL-CIRC	£199.99
HD 82mm Protector	£99.99
HD 82mm UV	£99.99

Hoya Pro
Revolutionary performance in light transmission & colour balance. Glass just 1mm thick, mounted in a super slim 3mm ring and 12 layers of super multi-coating.

Pro-1D 52mm Protector	£39.99
Pro-1D 52mm UV	£39.99
Pro-1D 52mm PL-CIRC	£84.99
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Pro-1D 55mm UV	£39.99
Pro-1D 55mm PL-CIRC	£89.99
Pro-1D 58mm Protector	£44.99
Pro-1D 58mm UV	£44.99
Pro-1D 58mm PL-CIRC	£94.99
Pro-1D 62mm Protector	£49.99
Pro-1D 62mm UV	£49.99
Pro-1D 62mm PL-CIRC	£99.99
Pro-1D 67mm Protector	£59.99
Pro-1D 67mm UV	£59.99
Pro-1D 67mm PL-CIRC	£119.99
Pro-1D 72mm Protector	£64.99
Pro-1D 72mm UV	£64.99
Pro-1D 72mm PL-CIRC	£134.99
Pro-1D 77mm Protector	£74.99
Pro-1D 77mm UV	£74.99
Pro-1D 77mm PL-CIRC	£169.99
Pro-1D 82mm Protector	£79.99
Pro-1D 82mm UV	£79.99
Pro-1D 82mm PL-CIRC	£189.99

cokin®

Cokin P Series
The original square filter system. Cokin P Series filters are designed for shorter focal lenghts 20-24mm or 28mm as well as for wide angle zooms (24-50/28-85/35-135mm)

49mm P Adaptor	£12.99
52mm P Adaptor	£12.99
55mm P Adaptor	£12.99
58mm P Adaptor	£12.99
62mm P Adaptor	£12.99
67mm P Adaptor	£12.99
72mm P Adaptor	£12.99
77mm P Adaptor	£12.99
82mm P Adaptor	£12.99
P Holder & Catalogue (BP400)	£12.99
P Wide Angle Holder	£14.99
P Digital SLR Nik Kit H521-67	£38.99
P255 Modular Hood	£15.99
P001 Yellow Filter	£15.99
P002 Orange Filter	£15.99
P003 Red Filter	£15.99
P007 Infrared (89B)	£39.99
P026 Warm 81A	£15.99
P027 Warm 81B	£15.99
P056 Star 8	£24.99
P120 G1 Gradual	£21.99
P121 G2 Gradual	£21.99
P121F G2 Gradual Full	£21.99
P121L G2 Gradual Light	£21.99
P121M G2 Gradual Med	£21.99
P121S G2 Gradual Soft	£21.99
P122 B1 Gradual	£21.99
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Jacobs by Cokin
Our own range of filters are available in popular effects and sizes offering outstanding quality and great value for money.

30.5mm Circ-PL Filter	£10.99
37mm Circ-PL Filter	£10.99
49mm Circ-PL Filter	£26.99
49mm UV Filter	£10.99
52mm Circ-PL Filter	£29.99
52mm UV Filter	£14.99
55mm Circ-PL Filter	£29.99
55mm UV Filter	£14.99
58mm Circ-PL Filter	£34.99
58mm UV Filter	£16.99
62mm Circ-PL Filter	£39.99
62mm UV Filter	£19.99
67mm Circ-PL Filter	£44.99
67mm UV Filter	£21.99
72mm Circ-PL Filter	£49.99
72mm UV Filter	£25.99
77mm Circ-PL Filter	£54.99
77mm UV Filter	£29.99

CLEANING & PROTECTION

LENSPEN
Cleaning Pen....£9.99



LENSPEN Sensor Klear Angled £15.00
LENSPEN Sensor Klear Loupe £40.00



VISIBLEDUST
SL700 Arctic Butterfly.. £54.99
SL724 Arctic Brite Vue.£84.99
Sensor Loupe (7x)..... £59.99
Zeeion Non Contact Dust Removal..... £34.97
Mini Swab 1.3x..... £24.97
Mini Swab 1.6x..... £24.97
Vdust Plus 7.5ml..... £14.99



JACOBS Air Duster Refill £9.99
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JACOBS LCD Protector £4.99
JACOBS Microfibre Cloth £4.99



JACOBS Cleaning Kit £9.99
JACOBS Blower Brush £8.99



GIOTTOS Rocket Air (L) £11.99
GIOTTOS Q Roll Air £11.99



PROPHOT Wet Wipes £3.99
DELKIN SensorScope Kit £81.99



METZ FLASHGUNS (Most available in Canon, Nikon, Olympus, Panasonic, Sony and Pentax fits)



20 C-2	36 AF-4	48 AF-1	58 AF-1
£39.99	£74.99	£188.99	£278.99

POCKETWIZARD WIRELESS

Plus II set	£369.99
Plus II Transceiver	£189.99
Multimax Transceiver	£249.99
PC1 Cable	£8.99

HILDOZINE
Safely secure your pocketwizard with confidence.
Transceiver Caddy.....£12.99
Protective Storgae Jacket.....£7.99

STUDIO LIGHTING

Jacobs Studio 160 Lighting Kit
£199.99
Includes two 160W Flash Heads, two Lighting Stands, Soft Box, Gold Umbrella Honeycomb, Clear Diffuser, Blue, red and yellow filters,Snoot, IR remote, sync lead and a deluxe studio carrying bag.



Bowens 4713 Gemini 200 2 Head Kit
Inc. two Gemini 200Ws, two Bowens 90cm Silver/White Umbrellas, two 120° Wide-Angle Umbrella reflectors and two Bowens support stands.
£459.99



Bowens 4850 Gemini 500R 3 Head Kit
Includes three Gemini 500Ws, two Bowens 115cm Silver/White Umbrellas, two 120° Wide-Angle Umbrella reflectors, one Softbox and three support stands.
£1480.99



Bowens 4820 Gemini 500R Travel Pack Kit .£1378.99
Bowens 4800 Gemini 250R Head Kit £810.99
Bowens 4800 Gemini 500R Head Kit £949.99

Strobies Portrait Kit STR100 £99.99
Lightweight & portable STROBIES lighting accessories, ideal for the mobile photographer, indoors or outdoors. Simple to put together using a Flex Mount on your flashgun, no glue, velcro or rubber bands needed! Swap between the Beauty Dish or the Globe Diffuser in seconds



Interfit Strobies EFX Kit STR101.....£69.99
Interfit Strobies XS Softbox Kit £99.99

Interfit EX150 MkII Kit FREE DVD £229.99
Award winning - all you need to get started in the creative world of studio lighting! Includes two Heads, two Lighting Stands, Softbox and Umbrella.



Interfit EX150 MkII Kit Includes three Heads **£419.99**
Interfit EXD200 Kit All in 1 kit **£289.99**
Interfit EXD300 Kit Softbox umbrella kit **£469.99**
Interfit EXD400 Kit Softbox umbrella kit **£539.99**

LASTOLITE LIGHTING ACCESSORIES

Ezybalance
1250 30cm £18.99

Xpobalance
1558 38cm £35.99



Ezybalance Hotshoe
2438 38x38cm ...£92.99
2462 60x60cm ..£112.99

Ezybalance Softboxes
2460 60x60cm £122.99



Micro Apollo
2201 Micro Apollo 45 ..£27.99
2204 Micro Apollo 60 ..£30.99

TriGrip Reflectors

3631 silver/white 75cm	£61.99
3636 sunfire/silver 75cm	£61.99
4806 sunfire/white 120cm	£74.99
1206 sunfire/white 30cm	£12.99
1236 sunfire/silver 30cm	£12.99
3006 sunfire/white 75cm	£34.99
3731 silver/white Large	£76.99
3751 one stop diffuser	£76.99
3223 5-in-1 75cm	£46.99
3631 Dual duty 80cm	£25.99

TriFlip Kit
3696 75cm 19" £92.99

Reflector Brackets
Trigrip 2430 bracket £71.99
Universal 1100 bracket £49.99
Pocket 1113 bracket £42.99
2402 Tilthead shoe adapt £17.99

Background Supports
1108 3m wide £148.99

Backgrounds
5621 black/white 1.5x1.8m £112.99
5602 black velvet 1.5x1.8m £112.99
56FM Florida/maine 1.5x1.8m £102.99
67FM Florida/maine 1.8x2.15m ..£174.99
6701 black/white 1.8x2.15m £204.99
8017 baby poser £107.99

HiLite Backgrounds
8867 1.8x2.15m ..£318.99
8857 1.5x2.15m ..£266.99

Umbrellas
3203 silver 80cm £24.99
3207 white satin 80cm £17.99

ePhotomaket Kit
2484 small £51.99
3684 large £81.99

Studio Cubelite Kit
8825 70cm ..£461.99

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Brands include: Bronica, Canon, Contax, Fuji, Hasselblad, Leica, Mamiya, Nikon, Pentax, Rollei, Voigtlander & many more.

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FOR THE LATEST UP-TO-DATE PRICE....

MANFROTTO TRIPODS

Manfrotto 055X Range
The 055X PROB makes the famous Manfrotto patented horizontal centre column feature even easier to use. By extending the column to its highest vertical position, it can be swung round to horizontal without removing the head or disassembling the column itself.

055XPROB £118.99



055XB Tripod.....**£94.99**
055XPROB Tripod.....**£118.99**

Manfrotto 190X Range
Featuring a patented design which allows the centre column to be used horizontally as an extending arm, or vertically.

190XPROB £88.99*



*INC. £20 CASHBACK FROM MANFROTTO Valid 1st May - 31st July 2010.

190XB.....**£88.99**
190X PROB.....**£88.99***

Manfrotto 055CX Range
The 4-section 055CX PRO 4 combines the best performances of the 055 carbon family with lower dimensions. This tripod is compact and light, with the patented Q90°system for quick vertical-horizontal movements.



055CX3 .....**£243.99**
055CX PRO3 .....**£249.99**
055CX PRO4.....**£249.99**

190CX Range
Features an ergonomic leg angle selector. This new angle selector improves the comfort and precision in use. Made of 100% Carbon Fibre, providing rigidity and lightness.



190CX3.....**£189.99**
190CX PRO3.....**£239.99**
190CX PRO4 .....**£239.99**

Modo
The Modo range has been created for those on the move, the Maxi has a max height of 150.5cm, but folds down to 43.5cm and the ultra compact Mini 114.5cm but folds down to 36.5cm.



785B Modo Maxi.....**£44.99**
797 Modo Pocket.....**£14.99**

Manfrotto Tripod Bags
You look after your camera so why not protect your tripod?
Manfrotto Tripod Bag Unpadded 70cm.. **£29.99**
Manfrotto Tripod Bag Unpadded 80cm.. **£39.99**
Manfrotto Tripod Bag Padded 80cm..... **£49.99**

Manfrotto Tripod Straps
Includes a spring clip to fasten quickly at the shoulder of the tripod for a tight & secure grip.
Manfrotto MN102 Tripod Strap..... **£21.99**



MANFROTTO TRIPOD HEADS

Manfrotto Ball & Socket Heads
Designed to be lightweight but at the same time offer heavy duty load capacity.

494RC2 Mini Ball Head with RC2 Quick Release Plate **£39.99**



496RC2 Compact Ball Head with RC2 Quick Release Plate **£54.99**



498RC2 Midi Ball Head with RC2 Release Plate **£89.99**



Manfrotto Pan & Tilt Heads
Smooth control of pan, back and forward tilt plus side to side tilt movements.

804RC2 Basic Head Q/R **£594.99**



460Mg Magnesium Head ...**£68.99**



Manfrotto Video Heads
Small & lightweight heads with smooth fluid movement & pan & tilt locks.

128RC.. **£65.99**



700RC2 **£69.99**....



Manfrotto Joystick Heads
Just grip the handle and you can position your camera anywhere within a 180° sphere.

222 Joystick Head **£76.99**



322RC2 Heavy Duty Grip Head **£88.99**



324RC2 **NEW!** **£109.99**



327RC2 **NEW!** **£164.99**

MONOPODS

Manfrotto Monopods
Ever heard the one about a one legged tripod? You have now Monopods are perfect for those that need stability, speed and portability.

790B Modo.....**£25.99**
679B 3-Section **£35.99**
680B 4-Section **£44.99**
681B 3-Section.....**£49.99**
685B Neotec **£114.99**
695CX **£139.99**
694CX **£127.99**
776YB M-Y **£34.99**



Monopod Heads
234 Simple tilt head allows 900 tilt for vertical or horizontal format.



234 Tilt Head-M/Pod.....**£14.99**
234RC Tilt Head Q/R **£24.99**

GIOTTOS TRIPODS - 5 Year Warranty on all Giottos Tripods & Heads

NEW! Vitruvian VGR Tripod Kits
Designed to offer photographers not only a truly lightweight and compact tripod, but a full function monopod and ball head.
With "reverse technology" legs so that when collapsed they fold through 180 degrees and surround the tripod centre column and head - folding down into a unit that measures only 40cm long.
Unscrew the tripod leg, remove the centre colum & head then join them together to produce a monopod with a maximum height of 162cm.

Vitruvian VGR9255 & MN5310 .....**£199.99**
Vitruvian VGR8255 & MN5310 .....**£329.99**



MTL Adjustable Column Carbon Fibre
Patented multi-function centre column allows for 180° vertical movement and 360° degree horizontal rotation as a lateral arm. No need for an extra head when using the built-in universal 3-way head, just change to the short column and lock the safety knob.



MTL8351B Adjust Column .**£159.99**
MTL8350B Adjust Column..**£158.99**
MTL8361B Adjust Column .**£199.99**
MTL8360B Adjust Column .**£189.99**

MTL Adjustable Column Aluminium
Aluminium legs and patented multifunction centre column. No need for an extra head when using the built-in 3-way head, just change to the short column and lock the safety knob.



MTL9351B Adjust Column ...**£89.99**
MTL9351+MH5011 kit NEW**£119.99**
MTL9361B Adjust Column ...**£98.99**
MTL9361+MH5001 head .**£134.99**
MTL3361B Adjust Column ...**£99.97**

MTL Vertical Column Aluminium/Carbon Fibre
High density tubes minimise weight yet maximise rigidity. The centre column can be reversed to position the camera upside down. Maximum height (MTL9271B) 182cm.



MTL3271 Aluminium Vertical Column **£89.97**
MTL8240B Carbon Vertical Column.....**£169.99**

MT Travel
Extra compact dimensions yet all the features of the larger models including reversible or multi-function centre column. Models available in Carbon Fibre or Aluminium.



MT8246B Vertical Column **£169.97**
MT9340B Aluminium Adjust Column.....**£74.99**

GIOTTOS TRIPOD HEADS

Ball & Socket Heads
Giottos MH1302-652 Professional extra large ball & socket. Features light and extra large ball with hollowed ball structure. All of these plates feature a safety lock with "auto lock" retaining system.



MH1302-652 8kg.....**£59.99**
MH1301-652 12kg **£74.99**
MH1300-652 20kg **£74.99**
MH7002-652 4kg.....**£39.99**
MH7001-652 6kg.....**£44.99**
MH7000-652 8kg.....**£54.99**

Quick Release Plate
Replacement Square Mount Plate for MH652.
MH642 Q/R Plate 1/4 .....**£12.99**

Pan & Tilt Heads



Giottos MH5001 Smooth control of pan, back & forward tilt plus side to side tilt movements. The quick pan head incorporates a special patented double safety lock and a sprung location pin, which allows the equipment tobe simply and quickly loaded and unloaded.

MH5001 .....**£39.99**
MH5011 3-Way Head with quick release plate **£35.99**
VH6011-658B Birding Hd..**£64.99**

Accessories
Tripod Bag Large **£24.99**
Tripod Bag Medium **£24.99**
Shoulder Strap... .....**£19.99**

GIOTTOS MONOPODS

Monopods
Made from 6061 grade aluminium, featuring quick action lever leg locks, foam hand grip and security wrist strap.

Giottos MML3260B.....**£34.99**
Giottos MML3270B.....**£39.99**
Giottos MNL3290B **£44.99**

Velbon

Velbon Tripods
CX Mini Table inc. case.....**£19.99**
CX-440 Tripod inc. case **£29.99**
CX-540 Tripod inc. case **£39.99**
CX-640 Tripod inc. case **£49.99**
CX-740 Tripod inc. case **£69.99**



JOBY gorillapod

Gorillapods
The Gorillapod firmly secures your camera to just about anything, it can be manipulated into a variety of positions to wrap around objects.



Gorillapod Black.....**£14.99**
Gorillapod SLR.....**£29.99**
Gorillapod SLR Zoom.....**£39.99**
Gorillapod Green.....**£14.99**
Gorillapod Focus.....**£89.99**
Gorillapod Magnetic NEW **£24.99**
Gorillapod BH1 Head.....**£39.99**
Gorillapod BHX Head NEW..**£69.99**

GITZO TRIPODS - Available at our New Oxford Street store only and as a special order through other stores.

Systematic
The strongest and most stable available, they also offer unsurpassed flexibility.



GT3541LS Studex.....**£499.99**
GT3511S Rapid Column...**£169.99**

Traveler & Head
An excellent choice for compact digital cameras and DSLRs, or even for lightweight camcorders. Come with the G1077M head.



GT1550T Traveler **£439.99**
GK2580TQR with head.....**£599.99**

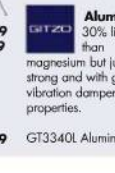
Mountaineer
The world's first carbon fibre tripod that maximises rigidity, vibration absorbtion and lightweight performance.
GT2542L long version **£579.99**

Leveling
Revolutionary leveling tripod for photographers who need fast set-up and leveling accuracy.



GT2540LVL Leveling **£549.99**

Explorer
A versatile support to explore new shooting perspectives.



GT2531EX Explorer GLock...**£409.99**

Aluminium
30% lighter than magnesium but just as strong and with great vibration dampening properties.



GT3340L Aluminium **£384.99**

GITZO TRIPOD HEADS New Oxford Street store only

Designed to meet the demands of professional photographers.

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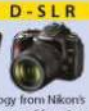
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FULL FRAME D-SLR

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LCD Screen	3.0"	FPS	3
Live View	✓	Card Type	SD

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Panasonic DMC-G10

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HD Video	✓
FPS	3.5
Card Type	SD

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NEW



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Safety release system prevents accidental release. Optional safety cord supplied. Waterproof cover keeps camera dry in bad weather. Mounts easily onto waist, or onto back-packs and other carrying systems. Patent Pending.

b-grip
enjoy your camera



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Smooth Gloss 290g, A4, 100	£29.95
Smooth Gloss 290g, A3, 25 sheets	£23.95
Smooth Gloss 290g, A3+, 25 sheets	£25.95
Smooth Pearl 290g, 6x4, 100 sheets	£14.95
Smooth Pearl 290g, 7x5, 100 sheets	£19.95
Smooth Pearl 290g, A4, 25 **+10 FREE**	£9.95
Smooth Pearl 290g, A4, 100	£29.95
Smooth Pearl 290g, A3, 25 sheets	£23.95
Smooth Pearl 290g, A3+, 25 sheets	£25.95
Gold Fibre Silk 310g, A4, 50 sheets	£32.95
Gold Fibre Silk 310g, A3+, 50 sheets	£79.95
Heavyweight Matt 200g, A4, 50 sheets	£9.95
Heavyweight Matt 200g, A3+, 50 sheets	£27.95
Smooth Fine Art 190g, A4, 10 sheets	£10.95
Smooth Fine Art 190g, A3+, 10 sheets	£23.95
Smooth High Gloss 225g, A4, 25 sheets	£14.95
Smooth High Gloss 225g, A3+, 25 sheets	£29.95
Smooth Lustre Duo 280g, A4, 25 sheets	£9.95
Smooth Lustre Duo 280g, A3+, 25 sheets	£39.95

ICC profiles available for all Ilford papers

Hahnemühle FINEART

Established in 1584, the Hahnemuhle name is synonymous with fine art printing. Full range now available at Premier Ink.

Sample Pack 14 sheets, A4	£9.95
Photo Rag 308 308g, A4, 20 sheets	£23.95
Photo Rag Pearl 320g, A4, 20 sheets	£26.95
Photo Rag Baryta 315g, A4, 20 sheets	£28.95
Fine Art Pearl 285g, A4, 20 sheets	£25.95
Fine Art Baryta 325g, A4, 20 sheets	£26.95

PermaJet

As a ***PermaJet Premier Stockist***, we supply the ENTIRE PermaJet range, including Baryta, Smooth and Textured Fine Art and Canvas. Below is just a selection.

Sample Pack 30 sheets, 21 different papers!	£14.95
Digital Gloss or Oyster 271g, 6x4, 50	£7.95
Digital Gloss or Oyster 271g, 7x5, 50	£10.95
Digital Gloss or Oyster 271g, A4, 50	£19.95
Digital Gloss or Oyster 271g, A3, 25	£21.95
Digital Gloss or Oyster 271g, A3+, 25	£29.95
Double Sided Oyster 285g, A4, 25	£26.95
Matt Proofing 160g, A4, 150	£19.95
Matt Plus 240g, A4, 25	£9.95
Matt Double Sided 220g, A4, 100	£21.95
Baryta Fibre Base Gloss 295g, A4, 25	£24.95
Baryta Fibre Base Royal 271g, A4, 25	£28.95
Smooth Fine Art Portfolio 200g, A4, 25	£19.95
Smooth Fine Art Portrait 300g, A4, 25	£26.95
Textured FineArt Artist 210g, A4, 25	£19.95
Textured Fine Art Parchment 285g, A4, 25	£21.95
Canvas Artistic 400g, A4, 10	£14.95
Canvas Photo Matt 350g, A4, 10	£16.95

ICC profiles available for all PermaJet papers

Fotospeed DIGITAL

As an ***Official Fotospeed Stockist***, we can supply the complete Fotospeed range. Below is just a tiny selection of their papers.

Sample Pack 14 sheets, 7 different papers!	£9.95
Pigment Friendly Gloss 270g, A4, 50 **+15 FREE**	£19.95
Pigment Friendly Lustre 270g, A4, 50 **+15 FREE**	£19.95
Pigment Friendly Satin 270g, A4, 50 **+15 FREE**	£19.95
Pigment Friendly Matt Duo 200g, A4, 100	£17.95
Platinum Gloss 290g, A4, 20	£22.95
Platinum Lustre 270g, A4, 20	£19.95
NT Natural Textured 315g, A4, 20	£17.95
NST Natural Soft Textured 315g, A4, 20	£17.95

ICC profiles available for all Fotospeed papers

E&OE. Prices may be subject to change, but hopefully not!

Lowering the Cost of Photography

Orders are shipped promptly by Royal Mail 1st class post, for which we charge just £1.76 per order. All prices **include VAT**, and a full VAT receipt is provided with every order. Payment accepted by credit/debit card, cheque or postal order. Orders accepted securely online, www.premier-ink.co.uk, over the telephone, 01926 339977, by post, or by visiting our showroom: Premier Ink & Photographic, Longfield Road, Sydenham Ind Estate, Leamington Spa, CV31 1XB.

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MEMORY

SanDisk MASSIVE SAVINGS! UP TO 50% OFF RRP!

SD & SDHC

512MB Transcend		£5.99
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2GB Sandisk	~~£7.99~~	£5.49
2GB Sandisk, Ultra II	~~£10.99~~	£6.79
4GB Kingston, Class 4		£8.99
4GB Sandisk	~~£11.99~~	£8.19
4GB Sandisk, Ultra II	~~£14.99~~	£10.29
4GB Sandisk, Ext III	~~£29.99~~	£16.49
8GB Kingston, Class 4		£16.99
8GB Sandisk	~~£25.99~~	£14.29
8GB Sandisk, Ultra II	~~£27.99~~	£17.99
8GB Sandisk, Ext III	~~£69.99~~	£29.99
16GB Kingston, Class 4		£32.99
16GB Sandisk	~~£39.99~~	£27.99
16GB Sandisk, Ultra	~~£52.99~~	£38.49
NEW Sandisk C10 Extreme 30MB/s		
4GB SD 30MB/s	~~£40.99~~	£22.49
8GB SD 30MB/s	~~£70.99~~	£38.99
16GB SD 30MB/s	~~£132.99~~	£69.99

MicroSD & MicroSDHC

1GB Kingston	£3.99
2GB Kingston	£5.99
4GB Kingston, Class 4	£9.99
8GB Kingston, Class 4	£17.99

Compact Flash

1GB Kingston		£8.99
2GB Kingston		£12.99
2GB Sandisk, Ultra II	~~£17.99~~	£10.99
4GB Kingston		£13.99
4GB Sandisk, Ultra II	~~£23.99~~	£14.99
4GB Sandisk, Ext III	~~£37.99~~	£24.99
8GB Kingston		£19.99
8GB Sandisk Ultra	~~£36.99~~	£22.49
16GB Kingston 133X		£42.99
16GB Sandisk Ultra	~~£79.99~~	£48.99
NEW Sandisk Extreme 60MB/s		
8GB CF 60MB/s	~~£79.99~~	£44.99
16GB CF 60MB/s	~~£129.99~~	£76.99
32GB CF 60MB/s	~~£249.99~~	£139.99
NEW Sandisk Extreme Pro 90MB/s		
16GB CF 90MB/s	~~£249.99~~	£140.99
32GB CF 90MB/s	~~£399.99~~	£256.99

xD Picture Cards

1GB Olympus	£11.99
2GB Olympus	£15.99

Memory Stick Pro Duo

2GB MS Pro Duo	£9.99
4GB MS Pro Duo	£14.99

Smart Media

128MB Samsung	£29.99

USB Pen Drives

2GB Sandisk	~~£8.99~~	£5.99
4GB Sandisk	~~£11.99~~	£7.79
8GB Sandisk	~~£19.99~~	£13.99
16GB Sandisk	~~£37.99~~	£24.99

Memory Cases

A range of protective shock-resistant rubber lined memory card cases to keep your memory cards safe and secure.



Vanguard 3D 4 cards, with keychain **£3.99**



Kenro MC5 2 cards, 8 AA batteries **£6.99**

BATTERIES

Camera Batteries

A comprehensive range of rechargeable li-ion batteries. Manufactured by respected independent battery manufacturers Energizer and Blumax. All batteries come with a 2 year guarantee.



NB-1L for Canon	£9.99
NB-2L/LH for Canon	£9.99
NB-3L for Canon	£9.99
NB-4L for Canon	£9.99
NB-5L for Canon	£9.99
NB-6L for Canon	£9.99
NB-7L for Canon	£9.99
NB-8L for Canon	£9.99
BP-511 for Canon	£12.99
LP-E5 for Canon	£9.99
LP-E6 for Canon	£WEB
LP-E8 for Canon	£15.99
NP40 for Fuji	£9.99
NP45 for Fuji	£9.99
NP50 for Fuji	£9.99
NP60 for Fuji	£9.99
NP70 for Fuji	£9.99
NP80 for Fuji	£9.99
NP95 for Fuji	£9.99
NP140 for Fuji	£12.99
NP150 for Fuji	£14.99
NP200 for Minolta	£9.99
NP400 for Minolta	£12.99
EN-EL1 for Nikon	£9.99
EN-EL2 for Nikon	£9.99
EN-EL3/3A for Nikon	£9.99
EN-EL3E for Nikon	£15.99
EN-EL5 for Nikon	£9.99
EN-EL7 for Nikon	£19.99
EN-EL8 for Nikon	£9.99
EN-EL9 for Nikon	£12.99
EN-EL10 for Nikon	£9.99
EN-EL11 for Nikon	£9.99
EN-EL12 for Nikon	£9.99
Li10B/12B for Olympus	£9.99
Li40B/42B for Olympus	£9.99
Li50B for Olympus	£9.99
BLM-1 for Olympus	£12.99
BLS-1 for Olympus	£12.99
CGA-S005 for Panasonic	£9.99
CGR-S006 for Panasonic	£9.99
CGA-S007 for Panasonic	£9.99
CGA-S008 for Panasonic	£9.99
BCG10E (V2) for Panasonic	£19.99
BLB13 for Panasonic	£WEB
D-Li8 for Pentax	£9.99
D-Li50 for Pentax	£12.99
D-Li78 for Pentax	£9.99
DB60 for Ricoh	£9.99
DB70 for Ricoh	£9.99
SLM-1137D for Samsung	£9.99
SLM-1674 for Samsung	£12.99
BG-1 for Sony	£19.99
NP-FM500H for Sony	£19.99
NP-FH50 for Sony	£19.99

Many more batteries in stock!

Battery Grips

A range of professional battery grips from Hahnel. All can take two Li-ion batteries for double the battery power. AA battery compartment and/or vertical shutter release and/or infrared remote, depending on model.



For **Canon** 30/40/50D:		£99.99
+1x BP-511:	£111.99	+2x BP-511: £123.99
For **Canon** 350/400D:		£59.99
+1x NB-2L:	£68.99	+2x NB-2L: £77.99
For **Canon** 450/500/1000D:		£69.99
+1x LP-E5:	£81.99	+2x LP-E5: £93.99
For **Nikon** D40/D60:		£59.99
+1x EN-EL9:	£71.99	+2x EN-EL9: £83.99
For **Nikon** D80/D90:		£89.99
+1x EN-EL3E:	£104.99	+2x EN-EL3E: £119.99
For **Nikon** D300/D700:		£139.99
+1x EN-EL3E:	£154.99	+2x EN-EL3E: £169.99
For **Sony** A200/A350:		£69.99
+1x EN-EL5:	£88.99	+2x EN-EL3: £107.99

SQUARE FILTERS

P-Type Filter System

The P-Type square/rectangular filter system consists of three parts:
1) An adapter ring that screws onto the front of your lens
2) A filter holder clips onto the ring
3) One or more P-Type (84mm wide) filters



P-Type Adapter Rings

49mm Adapter Ring	£4.99
52mm Adapter Ring	£4.99
55mm Adapter Ring	£4.99
58mm Adapter Ring	£4.99
62mm Adapter Ring	£4.99
67mm Adapter Ring	£4.99
72mm Adapter Ring	£4.99
77mm Adapter Ring	£4.99
82mm Adapter Ring	£4.99

P-Type Holders

Holder Standard	£5.99
Holder Wide Angle	£9.99
Hood Modular	£9.99
Hood Bellows	£34.99
A to P Type Adapter	£9.99

P-Type Bellows Hood

A new design of Bellows Hood that slots into the front slot of a standard P-Type Holder.



£34.99

P-Type Filter Wallet

A smooth cushioned filter wallet, to protect and store up to 8 P-Type filters



£9.99

We also stock Z-Pro (100mm) and A-Type (67mm) filters, holders and adapter rings

P-Type Filters (84mm wide)

Circular Polarizing	£27.99
Infra Red R72	£29.99
ND2	£8.99
ND4	£8.99
ND2 Soft Graduated	£10.99
ND2 Hard Graduated *NEW*	£10.99
ND4 Soft Graduated	£10.99
ND4 Hard Graduated *NEW*	£10.99
Light Blue Graduated	£10.99
Dark Blue Graduated	£10.99
Cool Blue Graduated	£10.99
Light Sunset Graduated	£10.99
Dark Sunset Graduated	£10.99
Light Tobacco Graduated	£10.99
Dark Tobacco Graduated	£10.99
Light Mauve Graduated	£10.99
Dark Mauve Graduated	£10.99
Light Red Graduated	£10.99
Dark Red Graduated	£10.99
Light Green Graduated	£10.99
Dark Green Graduated	£10.99
Light Yellow Graduated	£10.99
Dark Yellow Graduated	£10.99
Starburst x4/6/8, each	£11.99
Close-Up +1/2/4, each	£11.99
Fog Light/Strong, each	£8.99
Diffuser Light/Strong, each	£8.99
Spot White/Clear, each	£8.99
80A, 80B, 80C, each	£8.99
81A, 81B, 81C, each	£8.99
82A, 82B, 82C, each	£8.99
85A, 85B, 85C, each	£8.99
Red, Orange, each	£8.99
Yellow, Green, each	£8.99

Many more P-Type filters in stock!

P-Type Neutral Density Filter Kit £45.99

Neutral Density filters have a multitude of uses - from increasing detail in landscapes and reducing over-exposed skies, to creating stunning motion scenes by reducing shutter speeds. Here's a kit which includes all the popular ND filters, and everything you need to get started! The kit contains: 1x ND2 Filter, 1x ND2 Soft Graduated Filter, 1x ND4 Filter, 1x ND4 Soft Graduated Filter, 1x P-Type Filter Holder, 1 x P-Type Adapter Ring of your choice (49-82mm). Just £45.99 - saving £5 on the individual prices.

LENS HOODS & CAPS

Bayonet-Fit Lens Hoods



A comprehensive range of aftermarket matt black bayonet-fit lens hoods for Canon, Nikon and Sony lenses.

ES-62 Canon 50/1.8	£9.99
ES-71II Canon 50/1.4	£9.99
ET-60 Canon 75-300/4-5.6	£9.99
ET-65B Canon 70-300/4-5.6	£9.99
ET-67 Canon 100/2.8 Macro	£9.99
ET-67B Canon 60/2.8	£9.99
EW-60C Canon 18-55 IS	£7.99
EW-73B Canon 17-85 IS	£9.99
EW-78BII Canon 28-135 IS	£9.99
EW-78D Canon 18-200 IS	£9.99
EW-78E Canon 15-85 IS	£12.99
EW-83E Canon 17-40/4.0	£12.99
EW-83J Canon 17-55/2.8	£12.99
HB-25 Nikon 24-85, 24-120	£12.99
HB-37 Nikon 55-200 VR	£7.99
HB-45 Nikon 18-55 VR	£7.99
SH-006 Sony 18-70/3.5-5.6	£9.99
SH-108 Sony 18-55/3.5-5.6	£9.99

This is just a sample, more in stock!

Screw-Fit Lens Hoods

52mm Shaped Petal Hood	£6.99
55mm Shaped Petal Hood	£6.99
58mm Shaped Petal Hood	£6.99
62mm Shaped Petal Hood	£7.99
67mm Shaped Petal Hood	£7.99
72mm Shaped Petal Hood	£9.99
77mm Shaped Petal Hood	£9.99
82mm Shaped Petal Hood	£11.99
46mm Rubber Hood	£3.99
52mm Rubber Hood	£3.99
55mm Rubber Hood	£3.99
58mm Rubber Hood	£3.99
62mm Rubber Hood	£4.99
67mm Rubber Hood	£4.99
72mm Rubber Hood	£5.99
77mm Rubber Hood	£5.99

Lens Caps

30mm, 37mm, 40mm, 43mm, 46mm, 49mm, 52mm, 55mm, 58mm, 62mm, 67mm, 72mm, 77mm, 82mm, 86mm, 95mm

£3.99 each

We also stock a range of body caps and rear lens caps for Canon, Nikon, Olympus, Sony, Pentax, etc

SPIRIT LEVELS

Bubble Spirit Levels

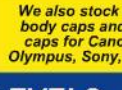
These simply mount onto the hot shoe of a DSLR camera.



Twin Axis Normal Hotshoe	£7.99
Twin Axis Sony Hotshoe	£7.99
Triple Axis Normal Hotshoe	£9.99
Triple Axis Sony Hotshoe	£9.99

Seculine Digital Spirit Level

A digital spirit level that mounts onto the hot shoe in the usual manner, and uses LEDs to confirm when the camera is perfectly level.



£29.99

CLEANING

Sensor Cleaning - DRY

Sensor Loupe 7X with LED	£54.95
ZEEion Anti-static Blower	£37.95
SL700 Arctic Butterfly	£52.95

Sensor Cleaning - WET

Cleaning Solution (7.5ml)	£15.99
Cleaning VSwabs (12)	£29.99
EZ Kit (1ml Solution, 4 Swabs)	£14.99

Camera / Lens Cleaning

Kenair Master Kit	£13.99
Kenair Spare Aerosol	£7.99
LensPen Original	£9.99
Spudz 6x6 inch	£4.99
Spudz 10x10 inch	£6.99
Kood Hurricane Blower	£3.99
Camlink 5-in-1 Clean Kit	£3.99

Massive range of cleaning equipment on our website and in stock.

SCREW-TYPE FILTERS

KOOD

Japanese Optical Glass Filters
Coated to reduce lens flare and reflections.



UV / Haze Filters

Used both to protect the lens of your camera, and to absorb ultraviolet rays that can cause photos to appear hazy.

46mm UV / Haze	£5.99
52mm UV / Haze	£5.99
55mm UV / Haze	£6.99
58mm UV / Haze	£7.99
62mm UV / Haze	£8.99
67mm UV / Haze	£9.99
72mm UV / Haze	£11.99
77mm UV / Haze	£14.99
82mm UV / Haze	£17.99
86mm UV / Haze	£22.99

More sizes in stock, from 24 to 86mm!

Circular Polarising Filters

These remove reflections from surfaces such as glass and water, as well as increasing contrast and saturation.

46mm Circular Polarizing	£17.99
52mm Circular Polarizing	£17.99
55mm Circular Polarizing	£19.99
58mm Circular Polarizing	£21.99
62mm Circular Polarizing	£24.99
67mm Circular Polarizing	£27.99
72mm Circular Polarizing	£34.99
77mm Circular Polarizing	£39.99
82mm Circular Polarizing	£44.99
86mm Circular Polarizing	£49.99

More sizes in stock, from 27 to 86mm!

Skylight Filters

Similar to a UV filter, but with a pinkish tinge to add a gentle warmth to your photos.

52mm Skylight	£6.99
55mm Skylight	£7.99
58mm Skylight	£8.99
62mm Skylight	£9.99
67mm Skylight	£10.99
72mm Skylight	£12.99
77mm Skylight	£15.99

More sizes in stock, from 30 to 105mm!

Neutral Density Filters

Used reduce the amount of light passing through the lens, reducing shutter speed without affecting colour contrast or balance. Available as ND4 (2 stop) and ND8 (4 stop).

52mm ND4 / ND8	£10.99
55mm ND4 / ND8	£12.99
58mm ND4 / ND8	£14.99
62mm ND4 / ND8	£16.99
67mm ND4 / ND8	£19.99
72mm ND4 / ND8	£24.99
77mm ND4 / ND8	£29.99

More sizes in stock, from 37 to 82mm!

Close Up Filter Sets

Sets containing three filters, rated at +1, +2, and +4 diopters. Increases close up / macro ability of the lens they are fitted to.

52mm Close-Up Set	£25.99
55mm Close-Up Set	£28.99
58mm Close-Up Set	£32.99

More sizes in stock, from 46 to 77mm!

Starburst Filters

These add a dramatic star cross flare to bright light sources, such as streetlights. They also give a slight soft focus effect.

52mm Starburst x4/6/8, each	£11.99
58mm Starburst x4/6/8, each	£15.99
67mm Starburst x4/6/8, each	£21.99
72mm Starburst x4/6/8, each	£27.99

More sizes in stock, from 46 to 82mm!

Lens Converters

Ideal for converting your kit lens to a 2.0X telephoto or 0.5X wide angle lens.

52mm 2.0X or 0.5X converter	£35.99
55mm 2.0X or 0.5X converter	£37.99
58mm 2.0X or 0.5X converter	£39.99

We stock many other filter types, including multi-image, fog, split-field, red, orange, yellow and green filters in a range of sizes.

FaderND Lord of the DARK

A new and innovative solution to carrying multiple Neutral Density filters - one ND filter with an adjustable range from 2 to 8 stop reduction!

LightCraftWorkshop FaderND Filters

Amazing but true - by simply rotating the outer element of the filter, the amount of light passing through the filter can be adjusted from a 2 stop to an 8 stop reduction.

The FaderND filter is constructed from two opposing sheets of polarizing glass, the outer sheet mounted in an independently rotating frame. The new **Mk II** version features both imporvied optical elements, and a thinner, conical shaped frame to reduce the chance of vignetting.

FaderND MkII (2-8 stop)

52mm FaderND MkII	£56.99
55mm FaderND MkII	£59.99
58mm FaderND MkII	£62.99
62mm FaderND MkII	£69.99
67mm FaderND MkII	£79.99
72mm FaderND MkII	£89.99
77mm FaderND MkII	£99.99

ND500MC (fixed 9 stop)

77mm ND500MC	£64.99

Genuine LightCraftWorkshop filters - beware of immitations!

STEPPING RINGS

Step-Up and Step-Down Rings

Stepping rings are used to "step-up" or "step-down" from one filter thread size to another.



34-37mm	52-55mm	58-55mm	67-62mm
37-43mm	52-58mm	58-62mm	67-77mm
43-46mm	55-52mm	58-67mm	72-67mm
46-49mm	55-58mm	62-67mm	72-77mm
49-52mm	58-52mm	62-72mm	77-72mm

This is just a tiny fraction of our range. Over 160 different sizes in stock, from 25mm to 105mm. Probably the largest selection in the UK!

All just £4.99 each!

MACRO PHOTOGRAPHY

Reversing Rings - £12.99

These fit to the camera body, between the camera and lens, leaving a screw thread to enable the reverse mounting of lenses. A way of obtaining a high reproduction ratio, allowing extreme Macro photography.

Canon: 52, 55, 58, 62, 67mm
Nikon: 52, 55, 58, 62, 67mm
Pentax K: 52, 55, 58, 62, 67mm
Olympus: 52, 55, 58, 62, 67mm
Sony: 52, 55, 58, 62, 67mm

Coupling Rings - £11.99

Used to attach two lenses together via their filter threads, achieving high magnifications

52-52mm, 52-55mm, 52-58mm
55-55mm, 55-58mm, 58-58mm

T2 Mounts - £12.99

Canon, Nikon, Sony, Oly, Pentax

Series 7 Rings, Rollei Rings and Hasselblad Rings also in stock.

Extension Tubes

Set of 3 tubes. They contain no optics, they simply move the lens further from the camera body, allowing closer focusing. Autofocus tubes available in Canon, Nikon and Sony fittings - manual tubes are also available in Pentax and Olympus fittings.

Manual Focus Tubes	£17.99
Autofocus Tubes	£129.99

Extension Bellows

Acting like an adjustable set of extension tubes, they allow fine control over focusing distance. Nikon, Canon and Pentax fit.



£52.99

Right Angle Viewfinders

Adjustable eyepiece, adjustable magnification, 360 degree rotating body. Ideal for close-up work.



1.0X-2.0X	£51.99
1.0X-3.25X	£79.99

BATTERIES & CHARGERS

Standard Rechargeables

High-power Ni-MH rechargeable AA and AAA batteries - all sold in packs of 4.

AAA 1000mAh Duracell		£6.99
AA 1300mAh Energizer	~~£3.90~~	£1.99
AA 2450mAh Duracell		£6.99
AA 2700mAh GP		£9.99
AA 2850mAh Ansmann		£13.99
Charger +2500mAh Energizer		£9.99

ReCyko+ Rechargeables

New technology, combining the benefits of Alkaline and Ni-MH rechargeable batteries. They come pre-charged, retain 90% of their charge after 6 months, and last 4 times as long as alkaline batteries!

AAA 850mAh equivalent (4)	£5.99
AA 2050mAh equivalent (4)	£7.99

Ultimate Lithium

Energizer Ultimate Lithium: The longest lasting AA and AAA batteries in the world!



AAA Ultimate Lithium (4)		£6.99
AA Ultimate Lithium (4)	~~£6.99~~	£5.99

Universal Charger

The **NEW** Hahnel UniPal charger is able to charge AA, AAA, Li-Ion batteries, cameras, phones, iPods and more! Mains power cable, plus 12V car charger. Full details on our website. **£29.99**



Li-Ion Charger

A universal Li-Ion charger, able to charge most camera batteries. Mains cable, plus 12V car charger. **£14.99**

Coin Cells, etc

A comprehensive range of specialist batteries - see our website for full range.

CR123A Energizer Lithium (1)	£1.99
CR2 Energizer Lithium (1)	£1.99
2CR5 Energizer Lithium (1)	£3.99
CRV3 Energizer Lithium (1)	£5.99
LR44 Energizer Alkaline (2)	£1.99
CR2025, CR2032 etc	£1.99

Full range of coin cells in stock

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FLASH GUNS

Nissin

Nissin Di866 Speedlite
The world's most powerful hotshoe flashgun! A guide number of 60m/ISO100 and a clear, full colour LCD panel, makes this advanced unit simple to use. Designed for use with Canon and Nikon digital SLRs, the Nissin Di866 fully supports Canon's E-TTL and Nikon's i-TTL functionality with the option for full manual overrides. Covering a range of focal lengths from 24-105mm and including a secondary fill in flash unit, the Nissin Di866 is the flashgun professionals have been waiting for. Includes built-in USB port for down-loading updates.
£219.95

Nissin Di622 Speedlite
An impressively powerful flash gun, with a guide number of 44m/ISO100. Incredible specification, including bounce and swivel flash head, wide angle diffuser and catch light reflector, wireless slave flash with power ratio, active AF assist light and energy saving auto-off circuit.
£104.95

Nissin Di466 Speedlite
An advanced and versatile flash gun, with a guide number of 33m/ISO100. Featuring the latest TTL flash control technology, specification includes adjustable bounce flash head, wide angle diffuser and catch light reflector, wireless remote slave flash on manual mode and energy saving auto-off circuit.
£92.95

Marumi DRF14 Ring Flash
The highly-acclaimed Marumi Ring Flash is a true ring flash - it consists of a main control unit and a seperate ring light which connects to the lens filter thread. This unit is ideal for Macro or Close-up photography due to the flash light being positioned directly between the camera lens and subject allowing for even/shadowless illumination. The flash has a 14m/ISO100 guide number and features auto TTL exposure. The lens mount is 52mm, step-up rings are also supplied for 55mm, 58mm, 62mm and 67mm fittings. Available in Canon, Nikon and Sony fit, all with full automatic TTI metering.
£109.95

Metz

Metz 48 AF-1
A multi-award winning powerful and versatile flash gun. Vertical tilting and horizontal swivelling head, guide number of 48m/ISO100, auto zoom head, wide angle reflector, built-in wireless flash slave sensor, USB port for downloading updates. Too much spec to list here - a superb flashgun!

METZ MADNESS !!!
20 AA BATTERIES - FREE
FLASH DIFFUSER - FREE
...with every Metz 48-AF1

SPECIAL OFFER PRICE
£169.95
Dedicated TTL models for Canon, Nikon, Sony, Olympus, Panasonic, Pentax and Samsung!

Metz 58 AF-1
Guide Number of 58m/ISO100. TTL models for Canon, Nikon, Sony, Olympus, Panasonic, Pentax and Samsung!
£279.95

Metz 36 AF-4
Guide Number of 33m/ISO100. TTL models for Canon, Nikon, Sony, Olympus, Panasonic, Pentax and Samsung!
£69.95

TTL Flash Cords

1.8m Coiled - Canon	£24.99
1.8m Coiled - Nikon	£24.99
1.8m Coiled - Sony	£24.99
3.0m Straight - Canon	£29.99
3.0m Straight - Nikon	£29.99
3.0m Straight - Sony	£32.99
3.0m Straight - Olympus	£29.99
3.0m Straight - Pentax	£29.99
1.5m Coiled - Universal	£49.99

FLASH ACCESSORIES

Inverted Dome Pro Flash Diffuser Set
Comprising a clear vinyl body that simply slips onto the head of the flash gun, and an inverted frosted dome that clips onto the front.
In addition to diffusing the flash directly hitting your subject, the inverted dome spreads light evenly through the sides of the clear vinyl body, lighting up the surrounding environment, thus producing a natural soft daylight effect. Especially useful for shooting interiors and portraits, and is a firm favourite with wedding photographers.
Supplied with four domes - neutral, yellow, amber and blue, giving you a full range of natural, cool, or warm-up tones. Available in four sizes, to fit the heads of most flash guns:
Size 1: 62-65 x 39-42mm Nikon SB600, SB800, etc
Size 2: 64-68 x 35-38mm Canon 420EX, 430EX, etc
Size 3: 68-72 x 46-49mm Nikon SB26, 27, 28, etc
Size 4: 73-77 x 46-49mm Canon 550EX, 580EX, etc
£29.95

Bounce Flash Diffuser
These popular, simple opaque plastic diffusers simply fit onto the front of your flash gun, creating a diffused bare bulb effect with even coverage. Huge range available for Canon, Nikon, Sony, Olympus, Pentax, Metz & Nissin. Below is just a sample of the range:
Canon 270EX / 380EX / 420EX
Canon 430EX / 430EXII / 550EX
Canon 580EX / 580EXII
Nikon SB600 / SB800 / SB900
Nikon SB24 / SB25 / SB26 / SB28
Sony: HVL-F42AM / HVL-F58AM, **Metz:** 48AF1 / 58AF1
Nissin: Di466 / Di622 / Di866, **Pentax:** AF-540FGZ
£10.95

Lastolite Ezybox Hotshoe
Studio quality softboxes for your hotshoe flashgun. Complete with hotshoe mounting bracket for attaching to lightstand. Comes in three sizes, 38x38cm, 60x60cm and 76x76cm. Available as kit with 4-section light stand, tilt head, extending handle, shoulder bag and carry case.

38cm Ezybox Hotshoe	£89.95
38cm Ezybox Hotshoe Kit	£169.95
60cm Ezybox Hotshoe	£109.95
60cm Ezybox Hotshoe Kit	£169.95
76cm Ezybox Hotshoe	£129.95
76cm Ezybox Hotshoe Kit	£209.95
Handle Extendable 24-48cm	£21.99
Handle Extendable 65-150cm	£29.99
Diffuser Masks 38cm	£39.99
Diffuser Masks 60cm	£41.99
Clamp with spigot	£12.99

Lastolite TriGrip
Handy triangular pop-up reflectors with moulded handle.

TriGrip Mini 45cm	£44.99
TriGrip Standard 75cm	£59.99
TriFlip 8-in1 sleeves for TriGrip	£39.99

Lastolite Flashgun TiltHeads
These ingenious Lastolite tiltheads provide a way of attaching your flashgun or flashguns, plus umbrella, to a lightstand. The standard tilthead holds one flashgun, while the TriFlash can hold 1, 2 or 3, for those seeking extra power or quicker recycle times. Available individually, or as kits containing light-stand and 80cm umbrella.

TiltHead For Single Flashgun	£16.99
TiltHead Umbrella Kit	£89.99
TriFlash For 1-3 Flashguns	£39.99
TriFlash Umbrella Kit	£95.99

Colour Balance and Exposure Control
Handy pop-up colour balance and exposure control grey and white cards from Lastolite.

EzyBalance 30cm	£17.99
EzyBalance 50cm	£29.99
XpoBalance 38cm	£34.99

Full Lastolite range available. Reflectors, Umbrellas, Paper Roll Backgrounds, HiLite Backgrounds ...and more!

CAMERA BAGS

tamrac

Expedition Backpack
Tamrac's famous range of Expedition backpacks have recently been upgraded and can carry huge amounts of camera kit in comfort! Fully MAS compatible.

Expedition 4X	£69.95
Expedition 5X	£82.95
Expedition 6X	£95.95
Expedition 7X	£119.95
Expedition 8X	£137.95
Expedition 9X	£159.95

Aero Speed Pack
Dual access, dual compartment photo backpacks, with front and side openings.

SpeedPack 75	£56.95
SpeedPack 85	£75.95

Velocity Sling
A unique design of sling backpack, that opens away from your body for even faster access to your gear!

Velocity 6X	£29.95
Velocity 7X	£36.95
Velocity 8X	£42.95
Velocity 9X	£49.95
Velocity 10X	£59.95

Modular Accessory System
The patented Tamrac Modular Accessory System (MAS) allows photographers to customise their bags using accessories that attach to MAS slots on Tamrac bags.

Water Bottle With Holder	£9.95
Lens Case Pro 50	£11.95
Lens Case Pro 100	£12.95
Lens Case Pro 200	£13.95
Flash Case Medium	£8.95
Flash Case Large	£9.95
Rain Cover Medium	£17.95
Rain Cover Large	£19.95
MAS Belt Medium	£15.95

VANGUARD

Vanguard UP-Rise Messenger bags
A brand new range of innovative shoulder bags. Concealed quick-access top opening, laptop compartment, customiseable and removeable interior - packed with features. Clever UP-Rise expanding zip system allows bag to increase or reduce in size!

UP-Rise 28 Messenger	£59.95

External Dimensions: 28.0 x 10.5 x 24.0cm
Internal Dimensions: 36.0 x 22.5 x 32.0cm
Laptop Compartment: 12" Laptop

UP-Rise 38 Messenger	£79.95

External Dimensions: 38.0 x 10.5 x 28.0cm
Internal Dimensions: 44.5 x 22.5 x 36.0cm
Laptop Compartment: 15/17" Laptop

Vanguard UP-Rise Backpacks
Gold award winning range of backpacks, featuring the patented UP-Rise expanding system. Smart & discreet. Durable & practical.

UP-Rise 43 Slingbag	£59.95
UP-Rise 45 Backpack	£75.95
UP-Rise 46 Backpack	£79.95
UP-Rise 48 Backpack	£89.95

Vanguard Pampas Sling Backpack
A range of sling backpacks, with day pack at the top and camera section at the bottom. The bag sits comfortably on your back, and when needed, revolves round to your front for easy access, without removing the bag.

Pampas 37	£29.95

External Dimensions: 34.0 x 21.5 x 21.5cm
Internal Dimensions: 17.0 x 19.0 x 13.0cm

Pampas 57	£39.95

External Dimensions: 44.5 x 24.0 x 22.0cm
Internal Dimensions: 30.0 x 22.0 x 15.0cm

Vanguard Peking Shoulder Bag
Shoulder bags, with separate carrying handle and shoulder strap. Capable of carrying most DSLRs with kit lens attached. Two separate end compartments keep your accessories safe, tidy and well protected.

Peking 21	£18.95

External Dimensions: 29.0 x 22.0 x 17.0cm
Internal Dimensions: 21.0 x 15.0 x 11.0cm

Peking 25	£21.95

External Dimensions: 34.0 x 23.0 x 19.5cm
Internal Dimensions: 25.0 x 17.0 x 12.0cm

Entire **Vanguard** range available!

Kata 3N1 Sling

This unique range of bags provides three carrying options in one, morphing from sling to backpack and back again quickly and easily by use of its quick release buckles.

In sling position, the bag easily swings around from back to front to achieve quick draw access to your main camera and lenses.

In backpack position you can comfortably carry your equipment for long distance walking when needed. The included chest belt and balancing hip strap helps take the load of your heavy equipment off your shoulders.

Arrange your equipment in the bottom main compartment of the pack taking full advantage of the modular dividers to custom fit the bag to your exact equipment, while the large top compartment can be used as a daypack or for holding additional camera gear. Two external pockets allow quick access to accessories without opening the main compartments. The included rain cover folds neatly away into an integrated pocket.



Winner



Kata 3N1-10 £65.95
External Dimensions: 41.0 x 22.0 x 16.5cm
Internal Dimensions: 28.5 x 19.0 x 15.0cm

Kata 3N1-20 £75.95
External Dimensions: 44.0 x 23.5 x 19.0cm
Internal Dimensions: 31.5 x 22.0 x 16.0cm

Kata 3N1-30 £85.95
External Dimensions: 45.0 x 32.0 x 19.0cm
Internal Dimensions: 32.5 x 29.5 x 16.0cm

Kata 3N1-Tripod Holder £14.95
For Kata 3N1 bags.

Kata 3N1-33 £119.95
Based in the award-winning 3N1-30, the new 3N1-33 has additional features, the most notable being a 15" laptop compartment. See website for details.

***IMPROVED* - Kata DPS Digital Rucksack**
The Kata DPS Digital Rucksack gives top level protection to two DSLRs with mounted lenses, 3-4 single lenses, a flash, as well as your personal items. The rucksack can be converted from a camera bag into a daypack when not shooting by removing the padded bottom camera insert. When used as a camera bag, the main compartment will hold your DSLR in a top grip position while the modular dividers system separates, organises and protects your lenses, flashes and other accessories. There is an included rain cover which folds neatly away, and an ergonomic chest belt and balancing waist strap for maximum comfort while transporting your gear.



DR-465*i* £57.95 **DR-466***i* £64.95 **DR-467***i* £72.95

DC Shoulder Bags
A range of understated, yet surprisingly roomy and well-padded shoulder bags, each including a detachable rain cover.

DC-435	£26.95
DC-437	£28.95
DC-439	£31.95
DC-441	£35.95
DC-443	£39.95
DC-445	£42.95

Insertrolley
Compatible with many Kata bags.
£49.95

Press Reporter Bags

PR-420	£109.95
PR-440	£129.95
PR-460	£149.95

Kata Elements Covers
Protect your camera against the elements!

E-690 for Small DSLR	£36.95
E-702 for Large DSLR	£49.95
E-704 lens extensions	£54.95

Entire **Kata** range available!

LIGHT METERS

SEKONIC

L758DR DigitalMaster
£439.95

L398A Deluxe III
£132.95

L208 TwinMaster
Analogue, incident and reflected, ambient light only.
£69.95

L308S FlashMate
Digital, incident and reflected, ambient and flash light.
£129.95

L358 FlashMaster
Digital, incident and reflected, simultaneous ambient and flash light, rotating head.
£199.95

RT-32 Radio Trigger Module	£89.95
Grey Card	£27.95
Profile Target SEPT2	£129.95

GOSSEN

Gossen DigiSix
£119.95

Gossen DigiFlash
£139.95

Gossen DigiPro F
Digital, incident and reflected, ambient and flash light. Multiple flash calculation, convenient rotating head.
~~WAS £199.95~~
£179.95

FLASH TRIGGERS

Hahnel Combi TF
Combination wireless remote shutter release and radio flash trigger. 2.4GHz, 100m range, 4 channels. 5 models available.

Receiver & Transmitter	£59.95
Extra Receivers	£39.95

Seculine Twin Link T2D
Radio flash trigger with LCD displays. 2.4GHz, 50m range, 16 channels.

Receiver & Transmitter	£119.95
Extra Receivers	£79.95

JJC JF Flash Trigger
Radio flash trigger, 433MHz, 20m range, 4 ch.

Receiver & Transmitter	£29.95
Extra Receivers	£17.95

Yongnuo CTR-301P
Radio flash trigger with infrared sensor. 433MHz, 30m range, 4 channels.

Receiver & Transmitter	£36.95
Extra Receivers	£19.95

PocketWizard
Full range of Pocket Wizard cables stocked.

Plus II	£169.95
Plus II (x2)	£309.95
Mini TT1	£199.95
Flex TT5	£219.95

NANEU

Adventure K3L
A spacious camera section at the bottom, separate daypack section at the top, and dedicated 15.4" laptop compartment behind. Hidden rain cover, tripod carrying system, padded shoulder, waist and chest belts. Too many features to list!
External Dimensions: 30.5 x 36.8 x 48.3cm
Interior Dimensions: Laptop Compartment: 28.0 x 3.8 x 35.5cm Camera Compartment: 16.5 x 29.2 x 15.2cm
£69.95

Adventure K4L
A larger version of the K3L, able to accommodate most 17" laptops.
External Dimensions: 33.0 x 35.6 x 52.1cm
Interior Dimensions: Laptop Compartment: 33.0 x 3.8 x 40.6cm Camera Compartment: 19.0 x 29.8 x 17.8cm
£82.95

U30 Backpack	£32.95
U60 Backpack	£44.95
U120 Backpack	£69.95

Billingham

We are proud to announce that we have been appointed as an Authorised Billingham Specialist Centre.

Billingham's exquisite range of hand-made camera bags are now on display in our recently-extended showroom in Leamington Spa. If you are considering investing in a professional camera bag that will protect your equipment for many years to come, we strongly recommend first-hand inspection of the Billingham range - only then can Billingham's preoccupation with excellence and attention to detail be fully appreciated.

The Hadley Pro
Based on the Hadley Original, the Hadley Pro features a number of additional features, including a carrying handle and waterproofed zippered back pocket. Available in Khaki & Tan, Sage & Tan, Black & Tan, and Black & Black
The Hadley Pro £122.95

More Billingham Bags

NEW Billingham f2.8	£129.95
NEW Billingham f1.4	£139.95
The Hadley Digital	£84.95
The Packington	£179.95
The Classic 550	£369.95

Billingham Accessories

Superflex Inserts (all)	£12.95
Shoulder Pads	£17.95
Tripod Straps	£14.95

The 5 Series
A firm favourite with serious photographers the world over, the "5 Series" range comprises four sizes of bag, available in Khaki & Tan, Black & Tan, or Black & Black.

Billingham 225	£199.95
Billingham 335	£209.95
Billingham 445	£224.95
Billingham 555	£239.95

The 07 Range
New Billingham bags for 2009, constructed from FibreNyte - a lighter alternative to traditional Canvas. Available in Khaki & Chocolate or Black & Black.

Billingham 107	£199.95
Billingham 207	£216.95
Billingham 307	£233.95

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Orders are shipped promptly by Royal Mail 1st class post, for which we charge just £1.76 per order. All prices **include VAT**, and a full VAT receipt is provided with every order. Payment accepted by credit/debit card, cheque or postal order. Orders accepted securely online, www.premier-ink.co.uk, over the telephone, 01926 339977, by post, or by visiting our showroom: Premier Ink & Photographic, Longfield Road, Sydenham Ind Estate, Leamington Spa, CV31 1XB.

01926 339977 **www.premier-ink.co.uk**



Premier Ink & Photographic

TRIPODS, MONOPODS & HEADS

Manfrotto — SPRING Special Deals

FREE HEAD — 679B Monopod plus 234 Head — Special Deal Price: £35.95 — While Stocks Last

055XPROB Tripod RRP: £159.95
804RC2 Head RRP: £69.95
2-Axis Spirit Level RRP: £29.95
Special Deal Price: £159.95 — SAVE £100 While Stocks Last

FREE HEAD — 694CX Monopod plus 234RC Head — Special Deal Price: £124.95 — While Stocks Last

MANFROTTO TRIPODS

190XPROB Tripod — Aluminium 3-section legs, Q90 column — Weight: 1.85kg Load: 5.0kg Folded: 57cm Height: 146cm — £99.95

055XPROB Tripod — Aluminium 3-section legs, Q90 column — Weight: 2.40kg Load: 7.0kg Folded: 65cm Height: 178cm — £114.95

190CXPRO3 — Carbon Fibre 3-section legs, Q90 column — Weight: 1.29kg Load: 5.0kg Folded: 58cm Height: 146cm — £209.95

190CXPRO4 — Carbon Fibre 4-section legs, Q90 column — Weight: 1.34kg Load: 5.0kg Folded: 50cm Height: 146cm — £219.95

055CXPRO3 — Carbon Fibre 3-section legs, Q90 column — Weight: 1.65kg Load: 8.0kg Folded: 65cm Height: 175cm — £249.95

055CXPRO4 — Carbon Fibre 4-section legs, Q90 column — Weight: 1.70kg Load: 8.0kg Folded: 54cm Height: 170cm — £259.95

MANFROTTO MONOPODS

790B Monopod — Aluminium 5-section — Weight: 0.29kg Load: 1.0kg Folded: 39cm Height: 145cm — £22.95

776YB Monopod — Aluminium 4-section — Weight: 0.33kg Load: 4.5kg Folded: 48cm Height: 152cm — £29.95

695CX Monopod — Carbon Fibre 5-section — Weight: 0.60kg Load: 5.0kg Folded: 47cm Height: 160cm — £137.95

679B Monopod — Aluminium 3-section — Weight: 0.60kg Load: 10.0kg Folded: 64cm Height: 162cm — £35.95

680B Monopod — Aluminium 4-section — Weight: 0.83kg Load: 10.0kg Folded: 51cm Height: 154cm — £45.95

681B Monopod — Aluminium 3-section — Weight: 0.78kg Load: 12.0kg Folded: 67cm Height: 161cm — £46.95

MANFROTTO HEADS

492 Ball Head — non quick-release 1/4" thread — Weight: 0.12kg Load: 2.0kg — £29.95

234 Tilt Head — Ideal for monopods — Weight: 0.27kg Load: 2.5kg — £14.95

234RC Tilt Head — with RC2 quick release — Weight: 0.27kg Load: 2.5kg — £24.95

494 RC2 Ball Head — with RC2 quick release — Weight: 0.32kg Load: 4.0kg — £41.95

496 RC2 Ball Head — with RC2 quick release — Weight: 0.46kg Load: 6.0kg — £49.95

498 RC2 Ball Head — with RC2 q/release — Weight: 0.67kg Load: 8.0kg — £76.95

468MG RC2 Hydrostatic Ball Head — magnesium, with RC2 q/r — Weight: 0.65kg Load: 10.0kg — £169.95

222 Grip Action Ball Head — with RC2 q/release — Weight: 0.78kg Load: 2.5kg — £78.95

322RC2 Grip Action Ball Head — with RC2 q/r — Weight: 0.7kg Load: 5.0kg — £94.95

804 RC2 Pan / Tilt — with RC2 quick release — Weight: 0.79kg Load: 4.0kg — £52.95

808 RC4 Pan / Tilt — with RC4 quick release — Weight: 1.42kg Load: 8.0kg — £98.95

410 Geared Head — with RC4 quick release — Weight: 1.22kg Load: 5.0kg — £149.95

056 3D Head — non quick-release 1/4" thread — Weight: 0.50kg Load: 3.0kg — £26.95

460MG 3D Head — magnesium, with RC2 q/release — Weight: 0.43kg Load: 3.0kg — £64.95

This is just a small selection of the MANFROTTO range now available to try in our new showroom in Leamington Spa

VANGUARD

The 2009 TIPA "Best Accessory" award-winning Vanguard AltaPRO tripod range is set to revolutionise the way you think about tripods!

Unlike traditional tripods, the **AltaPRO**'s Multi-Angle-Central-Column (MACC) allows the user to position the hexagonal central column at **ANY** angle from 0 to 130 degrees, without removing it from the tripod, while also allowing it to rotate a full 360 degrees! The clever Instant-Swivel-Stop-and-Lock (ISSL) mechanism allows photographers to securely reposition the central column in one simple movement, in a matter of seconds.
Other features include: Independent height and angle adjustable legs, patented magnesium die-cast canopy, spiked and rubber feet, non-slip rubberised foam leg warmers, anti-shock column ring - true professional specification tripods!

AltaPRO 263AT Tripod — Aluminium 3-section legs, magnesium canopy, Multi-Angle-Central-Column — Weight: 2.05kg Load: 7.0kg Folded: 63cm Height: 169cm — £119.95

AltaPRO 264AT Tripod — Aluminium 4-section legs, magnesium canopy, Multi-Angle-Central-Column — Weight: 2.10kg Load: 7.0kg Folded: 53cm Height: 159cm — £129.95

Alta+ 263AT Tripod — Aluminium 3-section legs, magnesium canopy, standard central column — Weight: 1.59kg Load: 5.0kg Folded: 63cm Height: 181cm — £89.95

Alta+ 264AT Tripod — Aluminium 4-section legs, magnesium canopy, standard central column — Weight: 1.64kg Load: 5.0kg Folded: 53cm Height: 171cm — £99.95

Alta+ 233AT — Aluminium 3-section legs, standard column — Weight: 1.26kg Load: 3.0kg Folded: 53cm Height: 151cm — £69.95

Alta+ 234AT — Aluminium 4-section legs, standard column — Weight: 1.21kg Load: 3.0kg Folded: 43cm Height: 136cm — £74.95

Alta+ 235AT — Aluminium 5-section legs, standard column — Weight: 1.18kg Load: 3.0kg Folded: 38cm Height: 116cm — £79.95

Alta+ 224CT — Carbon Fibre 4-section legs, standard column — Weight: 0.92kg Load: 3.0kg Folded: 41cm Height: 125cm — £179.95

VANGUARD Special Package Deals

Alta+ 233AT Tripod + **PH22** Pan/Tilt Head — £69.95 + £34.95 — Special Deal Price: £79.95 — SAVE £25

Alta+ 264AT Tripod + **PH31** Pan/Tilt Head — £99.95 + £54.95 — Special Deal Price: £109.95 — SAVE £45

VANGUARD MONOPODS

AP284 Monopod — Aluminium 4-section legs — Weight: 0.57kg Load: 8.0kg Folded: 51.5cm Height: 158cm — £33.95

AP324 Monopod — Aluminium 4-section legs — Weight: 0.69kg Load: 10.0kg Folded: 53.5cm Height: 167cm — £38.95

CP324 Monopod — Caron Fibre 4-section legs — Weight: 0.55kg Load: 10.0kg Folded: 53.5cm Height: 167cm — £89.95

VANGUARD HEADS

SBH30 Ball Head — Lightweight magnesium alloy, single adjuster knob, 2 spirit levels, quick release plate — Weight: 0.22kg Load: 5.0kg — £39.95

SBH50 Ball Head — Lightweight magnesium alloy, single adjuster knob, 2 spirit levels, quick release plate — Weight: 0.25kg Load: 6.0kg — £49.95

SBH100 Ball Head — Lightweight magnesium alloy, twin adjuster knobs, 2 spirit levels, quick release plate — Weight: 0.39kg Load: 10.0kg — £64.95

PH21 Pan / Tilt — 2-way fluid head, magnesium, spirit level, quick release — Weight: 0.35kg Load: 3.0kg — £34.95

PH31 Pan / Tilt — 2-way fluid head, magnesium, spirit level, quick release — Weight: 0.43kg Load: 5.0kg — £54.95

PH22 Pan / Tilt — 3-way fluid head, magnesium, spirit level, quick release — Weight: 0.34kg Load: 3.0kg — £34.95

PH32 Pan / Tilt — 3-way fluid head, magnesium, spirit level, quick release — Weight: 0.42kg Load: 5.0kg — £54.95

TRIPOD BAGS

BAG50 £7.95
BAG60 £8.95
BAG70 £9.95
Durable, lightweight, with shoulder strap.

This is just a small selection of the VANGUARD range now available to try in our new showroom in Leamington Spa

KOOD

A range of sturdy, value-for-money Tripods, Monopods and Ball Heads.

KOOD MONOPODS & TRIPODS

C324 Monopod — Aluminium 3-section — Weight: 0.57kg Load: 8.0kg Folded: 54cm Height: 169cm — £69.95

A284 Tripod — Aluminium 4-section — Weight: 2.17kg Load: 8.0kg Folded: 56cm Height: 154cm — £73.95

CF284 Tripod — Carbon Fibre 4-section — Weight: 1.69kg Load: 8.0kg Folded: 56cm Height: 160cm — £197.95

KOOD HEADS

BH02 Ball Head — Quick release plate, spirit level, 360 degree rotation, dual control knobs — Weight: 0.21kg Load: 6.0kg — £22.95

BH22 Ball Head — Sliding quick release plate, spirit level, 360 degree rotation, triple control knobs — Weight: 0.40kg Load: 8.0kg — £31.95

BH52 Ball Head — Heavy duty sliding quick release plate, 360 degree rotation, triple control knobs — Weight: 0.37kg Load: 8.0kg — £33.95

BH05 Ball Head — Weight: 0.30kg Load: 8.0kg — £26.95

BH25 Ball Head — Weight: 0.53kg Load: 12.0kg — £35.95

BH55 Ball Head — Weight: 0.51kg Load: 12.0kg — £38.95

BH08 Ball Head — Weight: 0.49kg Load: 12.0kg — £29.95

BH28 Ball Head — Weight: 0.74kg Load: 18.0kg — £45.95

BH58 Ball Head — Weight: 0.72kg Load: 18.0kg — £49.95

gorillapod

Gorillapod Original (GP1) — The original gorillapod, designed for compact cameras, available in grey, yellow, green, blue, red and pink. — Weight: 0.04kg Load: 0.35kg — £13.95

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TrekTech OPTERA

Trek Tech Optera 460 — £39.95

The Trek Tech Optera 460 is the next generation of portable tripods - **capable of holding 5kg.**

The flexible legs are padded, covered in a soft yet hard-wearing water resistant fabric, and have integrated rubber feet for extra grip. They can be bent in practically any direction, allowing you to mount you camera on almost any object! The D-ring cord system attaches to the legs, ensuring that they will not splay out. A camera is attached using Trek-Tech's clever magnetic quick release system, and two MagAdapter quick release plates are supplied.

The Optera 460 PRO has an extra long 460mm leg to support up to a 400mm zoom lens. Uniquely, it can also be wrapped around your camera for protection while being carried.

Trek Tech Optera 230 — A smaller version of the above, with 230mm long legs. — £37.95

SHUTTER RELEASES

Hahnel HW433 Wireless Pro Remote Shutter Release

Ultra high frequency 433MHz professional radio remote control, with a range of up to 80 metres! Autofocus, Bulb Function and Continuous Shooting functions. 4 digit code selector allows individual codes to be set to eliminate interference from other sources.

Each kit contains a wireless transmitter, a receiver with camera shoe and connectors to allow it to plug into your camera, plus a short distance cable operated shutter release.

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Available for Canon, Nikon, Sony, Olympus, and Pentax.

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An innovative cable remote control for digital SLRs, with interchangeable camera connectors and a 2 metre extension lead, giving the choice of shutter release from 0.8 or 2.8 metres. Autofocus, Bulb Function and Continuous Shooting functions.

Available for Canon, Nikon, Sony, Olympus, and Pentax.

TREKKING POLES

TrekTech

Trek Tech was formed in 2004 after the founders identified a market need based on personal outdoor experience – the need for a sturdy, lightweight, multi-purpose device with the functionality of both a tripod and trekking pole/hiking staff.

The result is the **TrekPod**, a lightweight, height-adjustable walking/hiking staff, with a fully integrated tripod, and a magnetic quick-release ball head system called the **MagMount**.

The unique MagMount quick release system incorporates a Neodymium "super magnet" as the initial connection between the ball head and a steel quick-release plate, called a **MagAdapter**, that screws into the bottom of your camera. A safety clip that stores below the ball head securely locks your device to the MagMount ball head. Each MagMount ball head is supplied with two MagAdapter quick release plates.

TrekPod II - £69.95

A refined version of the original TrekPod, using aircraft-grade aluminium alloy, it comes complete with a MagMount STAR ball head, weighs 765g, and is capable of supporting a camera system weighing up to 4kg. Maximum height in tripod mode of 146cm, and a maximum height in monopod mode of 158cm. The TrekPod II collapses down to 90cm.

TrekPod GO PRO - £129.95

The TrekPod GO PRO is a more compact TrekPod, collapsing down to just 58cm, yet still expanding to the same maximum height as the TrekPod II. Supplied with a travel case, it is small enough to qualify as aircraft hand luggage. Weighing 794g including the MagMount PRO ball head that comes as part of the package, it is able to support 4kg.

TrekPod XL - £246.95

The TrekPod XL is the top of the range TrekPod. Utilizing Carbon Fibre tubes, this is the lightest TrekPod ever, weighing in at just 480g, yet retaining the same dimensions as the TrekPod GO PRO. It includes the larger MagMount PRO ball head.

MagMount — The original MagMount ball head. Weighing in a just 73g, it is capable of holding 4kg. — £25.95

MagMount STAR — The same size as a standard MagMount, with a Square Tooth Anti Rotation (STAR) connection surface between the ball head and the MagAdapter quick release plate. Weighing 79g, with a maximum load rating of 4kg. — £32.95

MagMount PRO — Utilising the same Square Tooth Anti Rotation system as the MagMount STAR, the MagMount PRO is a larger ball head, weighing 127g, and capable of holding an impressive 6kg. — £64.95

All **MagMount** ball heads come with two **MagAdapter** quick release plates. These are also available separately:

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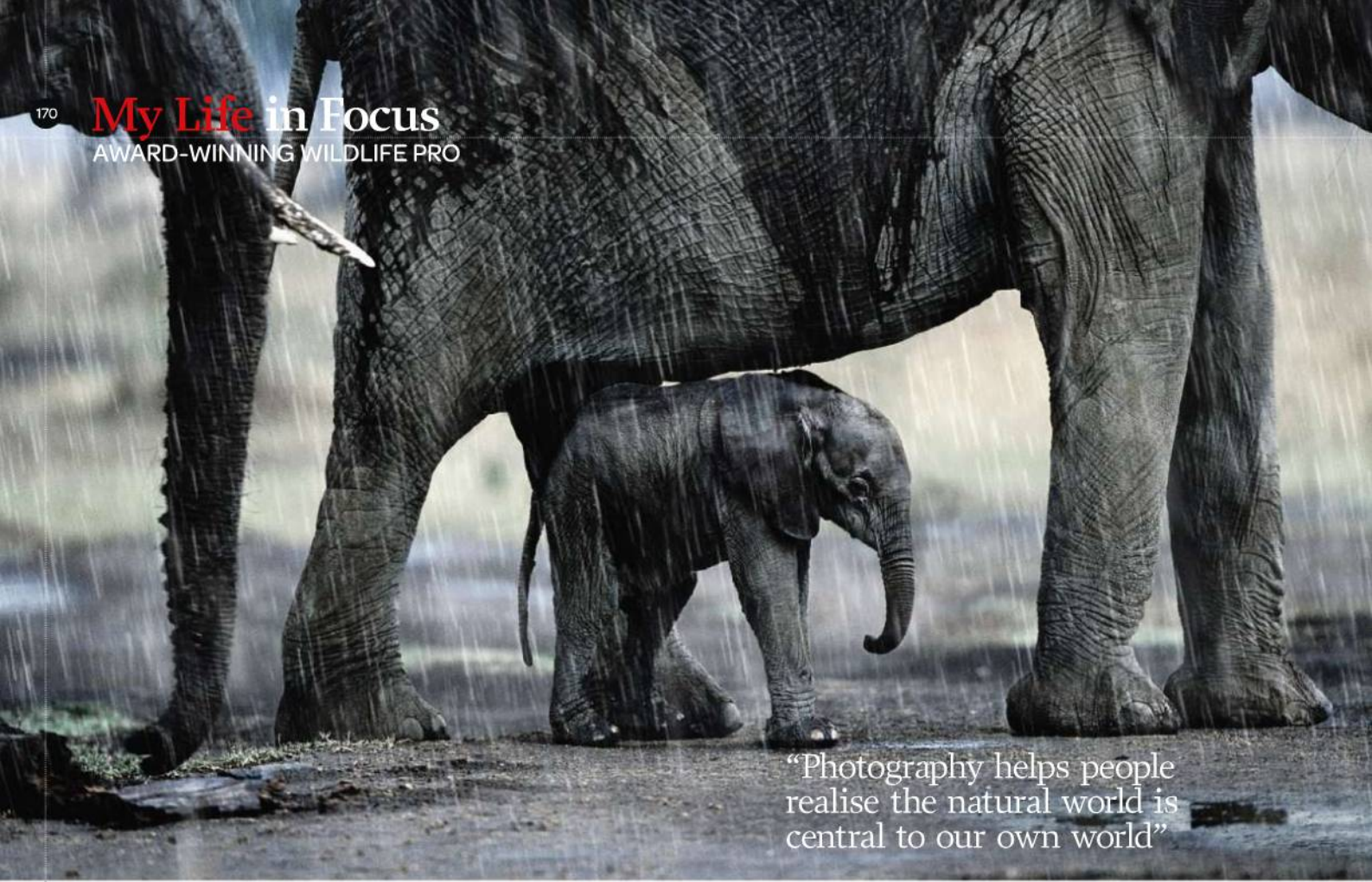






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Steve Bloom

Celebrated photographer Steve Bloom goes where the wild things are, and he's learned a lot in the process

Be excited by change
Photography literally means to 'paint or draw with light'. It's a fluid medium, continually changing, and that's what excites me. I never stop learning or experimenting. Some traditionalists mourn the demise of film, but a host of new digital creative possibilities have emerged in recent years, revolutionising photography.

Break conventions
I've got an insatiable appetite for art and exhibitions. Photography is often the single-viewpoint capture of a fraction of a second, and doesn't necessarily express the emotion of the subject well. Painters such as Picasso and Hockney have taught me that it's possible to look at life in the way that the eye and brain see. Photographers can now break conventions in their struggle to portray their experiences in an emotive and compelling way. In my book, *Trading Places – The Merchants of Nairobi*, I reconstructed a street with 100 pictures across 17 pages, so as the eye moves along the image, viewpoints and time change. This is much more like being there.

Use the power of photography
Photography is an immensely powerful medium for making people aware of the plight of people and wildlife. Many of us can easily become detached from the wider world. Photography helps people realise that the natural world is actually central to our own world, and that we are all interdependent. It's easy to become complacent about the environment in our comfortable modern lives.



PROFILE

- Born in South Africa in 1953, Steve Bloom is chiefly known for his wildlife work. His book and exhibition, *Spirit of the Wild*, received worldwide acclaim.
- His images have appeared on numerous magazine covers, including *Time* and *National Geographic*.
- Recently, Bloom returned to photographing people in his native Africa. His book *Trading Places – The Merchants of Nairobi* was particularly well received.

Always diversify
I'm chiefly known as a wildlife photographer. But my restless eye means that I'm not subject-specific. I'm equally at home photographing remote tribes in Africa or anything else for that matter. Irving Penn's most beautiful photographs, in my opinion, are of cigarette butts. Beauty can be found in anything.

Reach out to the world
I hope my pictures help people to get an intuitive understanding of the subjects. Being a photographer is a privilege, and making books and exhibitions is the best way to reach a wider audience. My latest book, *My Favourite Animal Families*, is actually written for kids. The challenge is to find the time to actually take photographs while also bringing them to a wider audience. Whenever I manage to get back to remote places with my camera, I'm always elated.

You can find out more about Steve Bloom and his work by visiting www.stevebloom.com.

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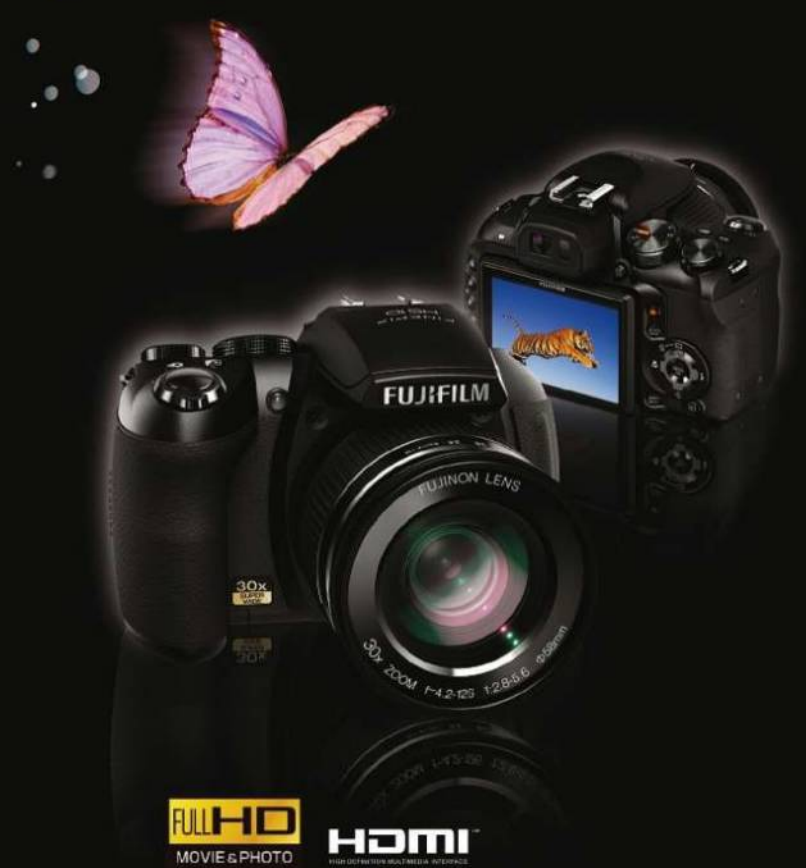
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