

Saturday 11 February 2017

Amateur Photographer



Lumix LX15
World's fastest f/1.4 zoom,
but is it a Sony RX100 killer?

Passionate about photography since 1884

How to get sharper shots

Beat softness for good
40 tried & tested tips for all
your favourite genres

Meyerowitz masterclass

A photography legend
shares his knowledge
and wisdom with AP

500mm best buy

New **Sigma** gives
big reach for nearly
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Garden greats

Winning images and
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Last issue we discussed how noise can be the bane of the modern photographer's life, along with sharpness (or the lack of it). Hopefully few

readers will suffer from hopelessly blurred shots every time, but most photographers will be disappointed by slightly 'soft' results at some point in their career. Maybe the shutter speed wasn't fast enough, or the AF point was slightly off, or you forgot to lock up

the mirror when shooting a landscape.

The reasons for softness can be many and varied, which is why we asked some top pros to share their best tips for razor-sharp shots, starting on page 12.

Other highlights of this packed issue include an exclusive interview with the legendary Joel Meyerowitz and tips and insights from the International Garden Photographer of the Year competition.

Nigel Atherton, Editor

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ONLINE PICTURE OF THE WEEK

The Frostiest Tree in the Forest

by Chris Dale

Canon EOS 6D, Tamron 70-300mm, 1/50sec at f/5, ISO 200

THIS image was uploaded to our Twitter feed using the hashtag #appicoftheweek. It was taken by AP reader Chris Dale in historic Sherwood Forest, Nottinghamshire, and is a fabulous demonstration of just what these cold winter months have to offer photographers.

'This image was taken on an early, and very cold, walk around Sherwood Forest just after Christmas,' says Chris. 'The frost really picked out the thinner branches of this sapling in a little clearing surrounded by bracken. With the help of a long lens and wider aperture I was able to make it stand out from the birches behind.'



Win! Each week we choose our favourite picture on Facebook, Instagram, Flickr, Twitter or the reader gallery using #appicoftheweek. PermaJet proudly supports the online picture of the week winner, who will receive a top-quality print of their image on the finest PermaJet paper*. It is important to bring images to life outside the digital sphere, so we encourage everyone to get printing today! Visit www.permajet.com to learn more.

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Send us your pictures

If you'd like to see your work published in *Amateur Photographer*, here's how to send us your images:

Email Email a selection of low-res images (up to 5MB of attachments in total) to appicturedesk@timeinc.com.

CD/DVD Send us a disc of high-resolution JPEG, TIFF or PSD images (at least 2480 pixels along its longest length), with a contact sheet, to the address on page 24.

Via our online communities Post your pictures into our Flickr group, Facebook page, Twitter feed, or the gallery on our website. See details above.

Transparencies/prints Well-packaged prints or slides (without glass mounts) should be sent by Special Delivery, with a return SAE, to the address on page 24.

NEWS ROUND-UP

The week in brief, edited by Liam Clifford

Fujifilm GFX 50S trade-in bonus



UK distributor Park Cameras has confirmed it will be officially stocking Fujifilm's first medium-format digital camera when it is released in early March. The dealer will also be offering up to a £500 bonus on all DSLR/mirrorless cameras traded in when purchasing Fujifilm's new GFX 50S. Visit www.parkcameras.com/fujifilm-gfx-50s.

Fotospeed Photographer of the Year

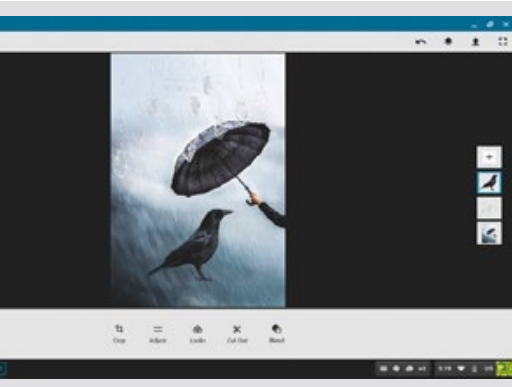
Paper brand Fotospeed has announced that it will be choosing a photographer to win £2,000 worth of prizes at this year's Photography Show, which takes place from 18 to 21 March at Birmingham's NEC. Prizes include a Canon A2 printer, £500 of inkjet paper and a bespoke day of tutoring with Doug Chinnery. To learn more, visit www.fotospeed.com.

New hard shell cases from Novo



A new range of Nova Dura hard shell cases is now available to order from www.novo-photo.com. The cases feature automatic pressurised air valve releases and a newly designed click-lock closing system. Diced foam comes as standard, but there will also be a soft adjustable partitioned case and padded shoulder strap. Prices start from £79.

New Adobe apps for Chromebooks



Commonly used in the classroom, Google's Chromebooks are receiving a host of Adobe Creative Cloud applications that capitalise on the speed and simplicity of the laptops. Available to download for free, featured apps include Photoshop Mix, Lightroom Mobile and Illustrator Draw.

New Sevenoak camera sliders

Kenro has added several new models to its growing Sevenoak line of camera sliders, for shooting professional-looking footage with smooth and stable horizontal camera movement. Built for use with cameras from DSLRs to larger video cameras, the range starts at £102. Visit www.kenro.co.uk to see the full series.



© MICHAEL TOPHAM

WEEKEND PROJECT

Creative cropping

Photographer David Loftus has photographed all but one of Jamie Oliver's best-selling cookery books. His stripped-back, fuss-free approach has won him many awards. If you own one of Oliver's books, you might have noticed that many of the bowls, boards and cups are shot with their edges clipped. This kind of tight cropping works brilliantly with circular objects, because our brain fills in the gaps to complete the circle. It also deals with the problem of portraying a circular object in a rectangular frame.

Whether we decide to physically move closer to a subject, zoom in, or make adjustments during post-production, a tight crop can help to remove anything from the frame that does not add to the story, distilling an image down to its core elements.

1 You can buy L-shaped guides to help you visualise a crop before releasing the shutter, but you can also make a set out of card. Hold them in front of you to create a rectangle and then move them in slowly.

2 Framing a portrait so that the top of your subject's head is missing ensures that the eyes fall in the top part of an imaginary grid, thus adhering to the rule of thirds. (If you do this make sure it looks deliberate!)



BIG picture

First chance to shoot with the astonishing Fujifilm GFX 50S

◀ Last year Fujifilm teased us with the development announcement of the GFX 50S – the first camera in an all-new medium-format mirrorless system the manufacturer is calling its GFX-series. Recently we had an opportunity to shoot with a pre-production sample to find out what its 51.4-million-pixel CMOS sensor is capable of. As this image, taken in the beautiful setting of Althorp House, shows the GFX 50S promises remarkable medium-format quality destined to appeal to those in the professional field. In the words of professional photographer, Wayne Johns, ‘The GFX 50S brings medium format forward to the modern day where it has been long in need of catching up.’ See www.amateurphotographer.co.uk/GFX50S

Words & numbers

When I have a camera in my hand, I know no fear

Alfred Eisenstaedt
Photojournalist
1898-1995


3 There are plenty of cropping tools available in Lightroom and Photoshop. When you crop this way you have the benefit of returning to the original file. Make sure the file is noise-free and sharp when viewed at 100%.

4 If you're shooting a portrait, animal or moving subject don't forget to leave a little extra space for the eyes or body to 'travel' into. Cropping too tightly can leave the viewer's gaze with nowhere to go.

When an object is cropped, but we are familiar with the general shape of it, our brain completes the rest of the picture

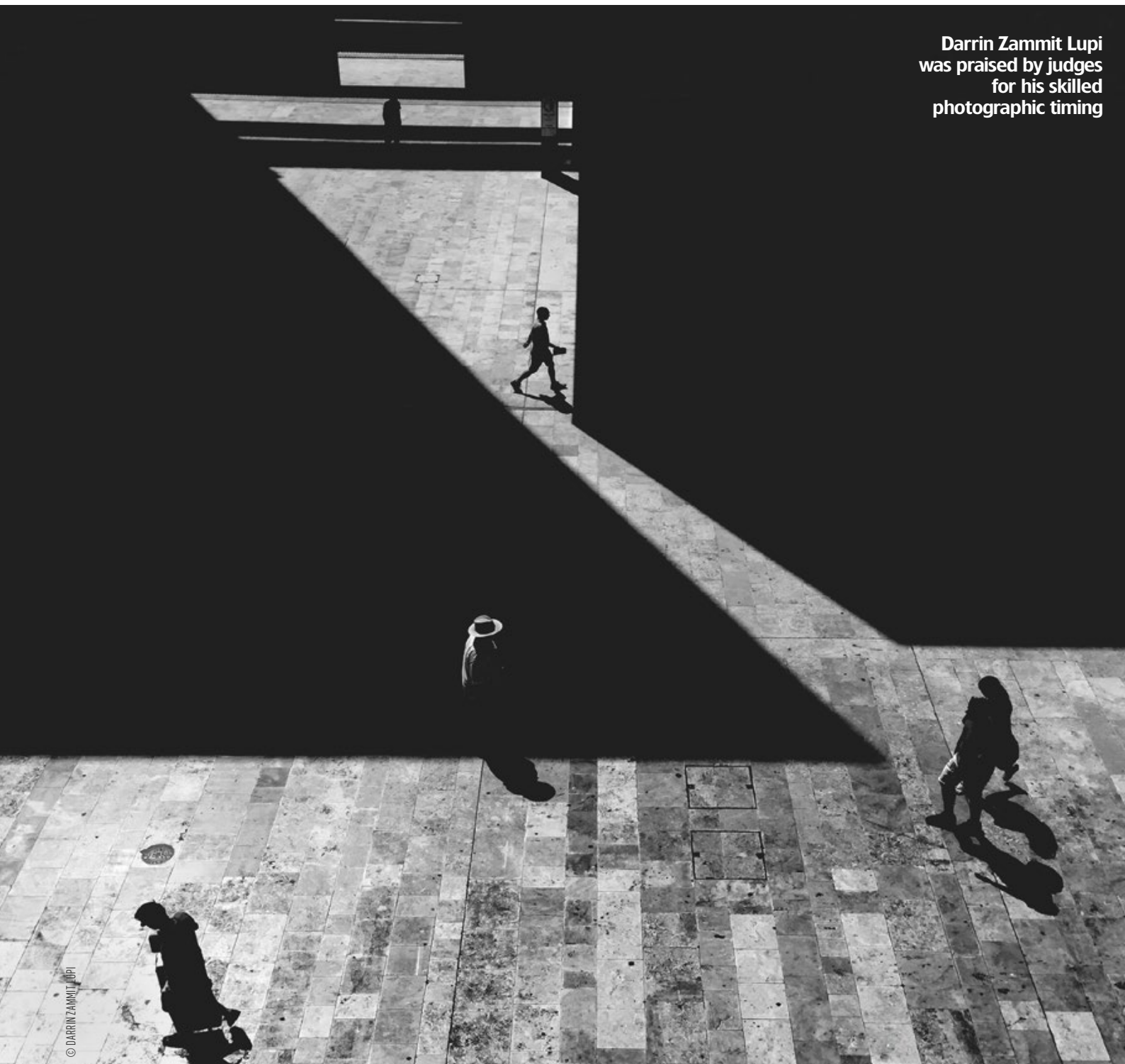


© TRACY CALDER



Number of EF lenses produced for Canon EOS cameras since 1987

SOURCE: CANON



Darrin Zammit Lupi was praised by judges for his skilled photographic timing




Shoot the Lake District with Jessops

 JESSOPS has launched a new photography experience for 2017. Joining the Jessops Academy's roster of photographic breaks, the three-day course will see students retreat to the Lake District to make the most of its vast horizons, impressive lakes and woodlands.

A member of the Jessops award-winning Academy Training Team will lead the course. All trainers are experienced photographers in their own right, and have a broad knowledge of all cameras. Students will benefit from having a basic photography knowledge of shutter speeds, aperture and ISO. However, the Jessops Academy will be offering tailored advice for all abilities during the trip.

The course runs from 31 October to 2 November. It costs £600 and includes transport, meals and accommodation. Visit www.jessops.com.

Societies' Photographer of the Year 2016

 MALTA'S Darrin Zammit Lupi has beaten more than 10,000 entrants to be crowned the Societies' Photographer of the Year 2016.

The competition is being credited as an international success, with entries received from all over the world via 26 monthly categories that include nature, architecture, landscape, sport and monochrome. Each month, a selection of these images is awarded a 'gold' or 'highly commended' standard, and these

then advance to a master shortlist, where they are reassessed and a final winner is chosen.

Lupi was presented with his title at the awards dinner at the Societies' annual convention and trade show in January. He received a Fujifilm X-T2 and lens as part of his prize, as well as accommodation, flights and tickets to the 2017 Wedding and Portrait Photography expo in Las Vegas, USA, later on this year – a prize value worth around £3,200.



Terry Donnelly took second place

'It's a night I'll remember for the rest of my life,' Lupi said, speaking of the awards ceremony.

The team of 44 judges said Lupi's shot, which was taken near Valletta in Malta, 'perfectly captures geometry combined with a definitive moment. The gentleman in the hat is a wonderful focal point'. On top of the overall grand prize, Lupi also won the Street Photography category.

Terry Donnelly took second place, while Manousopoulos Prokopis and Mauro Cantelmi shared third place. Visit thesocieties.net to see more.



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Martin Parr to be honoured for outstanding contribution

INTERNATIONALLY recognised British documentary photographer Martin Parr is set to receive the Sony World Photography Awards' Outstanding Contribution to Photography title this year, to be presented at the awards ceremony in London in April.

To coincide with the awards, an exhibition of some of his early monochrome work is planned for presentation at Somerset House from 21 April to 7 May, together with some of his best-known work, films and books. In addition, Parr will be giving a talk, available to the public, at the London School of Economics (LSE) on 21 April.

With its focus on leisure, consumption and communication, Parr's career has spanned more than four decades. Distinctive, challenging and often ambiguous, his work is credited with drawing out the drama of everyday life, and his reflections on national



Martin Parr's work will be recognised at the Sony World Photography Awards

© MARTIN PARR/MAGNUM PHOTOS

characteristics and international phenomena have earned him considerable respect in the field of documentary photography over the years. In 2014, he was voted President of Magnum Photos, having been a member since the late 1980s.

Parr said: 'It is a great honour to receive the Outstanding Contribution to Photography title, especially knowing the illustrious previous recipients such as William Klein and William Eggleston. It is also very

reassuring to see the World Photography Organisation and Sony's continuing support for all aspects of contemporary photography, through this exhibition and this season of awards.'

The Sony World Photography Awards is the world's largest photography competition. The shortlist for the 2017 awards will be announced on 28 February. Tickets for Parr's London seminar and the full winners' exhibition can be found at www.worldphoto.org/2017exhibition.

Google RAISR uses machine learning to sharpen your low-res images

ALWAYS on the hunt for fresh applications for its machine-learning capabilities, Google has turned its attention to intelligent upsampling – the process of creating a larger, high-quality version of a low-resolution image.

According to the tech giant, its Rapid and Accurate Image Super-Resolution (RAISR) technique incorporates machine learning to produce image-upscaling results that are 'comparable to or better than the currently available super-resolution methods'. Not only that, but it claims RAISR does so between 10 and 100 times faster – meaning that it can be run on a mobile device in real time. It also claims the system can therefore reduce bandwidth use by

up to 75% per image upscaled – saving on image-hosting costs.

Though only rolled out on the Android version of its Google+ social-media platform so far, Google plans to expand RAISR across a broader spectrum of services over the coming months.



RAISR technology creates a high-resolution version of a low-res image

For the latest news visit www.amateurphotographer.co.uk

Get up & go

The most interesting things to see, to do and to shoot this week. By Oliver Atwell



© SYD SHELTON

Rock Against Racism

Syd Shelton's photographs document the volatility of a country divided across race, class and gender. They expose the ferocity of cultural difference being hammered out on Britain's streets in the late 1970s, at a time when racist skinheads danced to Jamaican ska, punks embraced reggae and black kids reached out to punk.

Until 9 April, www.streetlevelphotoworks.org

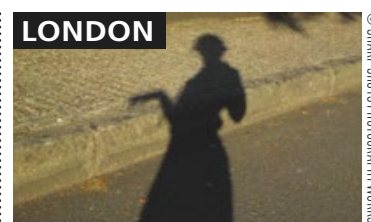


© ELAINE STAPLETON

Silent Voices

Silent Voices is a thought-provoking exhibition of daily life in the occupied Palestinian village of Bil'in, with images taken by children. Photographer Elaine Stapleton worked with the village's school children to produce this striking body of work.

Until 25 February, www.williamsonartgallery.org



© SIMON ELLINGWORTH

Photographing People

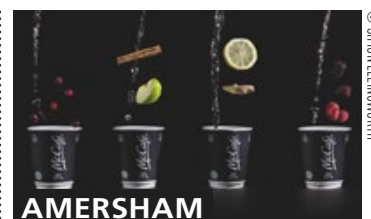
London's Photographers' Gallery is offering a workshop for those aged 11-15, where they can get to grips with the fascinating world of portraiture and self-portraiture. No previous photographic experience is necessary. The day costs £50 and DSLRs can be hired for £10.

15 Feb, www.thephoto-graphersgallery.org.uk



© STUART FRANKLIN/MAGNUM PHOTOS

SHREWSBURY



© SIMON ELLINGWORTH

AMERSHAM

Evolution Explored

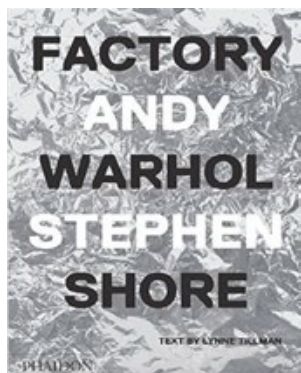
The work of internationally renowned photographers will go on show in Shrewsbury in an exhibition inspired by 'Evolution' and the town's links to Charles Darwin. Acclaimed photography agency Magnum Photos curates.

Until 20 April, www.grainphotographyhub.co.uk/portfolio-type/evolution-explored

Product photography

Conducted by the RPS, this day workshop is hosted by Simon Ellingworth, and looks at the skills and knowledge needed to be a product photographer. Alongside this, there will be an afternoon shooting with various light sources and light setups in the studio.

16 February, www.rps.org/events/2017/february



Bookshelf

Factory: Andy Warhol by Stephen Shore

A young **Stephen Shore** was at the right place and right time to document the goings on at Andy Warhol's seminal Factory. **Oliver Atwell** enjoys the ride

Published by

Phaidon

Price £39.95

192 pages

hardback

ISBN 978-0-

714872-7-442

★★★★★

The art scene of the 1960s is inextricably connected to the cool detachment of Andy Warhol's vast Pop Art output and the strange circus he built around his ego. It's difficult not to see Warhol as the catalyst that began to tip art over into the realms of commercialism and big money. How you feel about that depends entirely in how you feel about modern art. Many would argue that Warhol's art was a deliberately shallow attempt to create a form of satire on the burgeoning consumerist society. Others perhaps would see it as just a cynical cash-grab. Regardless, Warhol's world is considered vital in the history of art and the mystique he built around himself with his monosyllabic answers to interviews and his eyes hidden behind impenetrably dark shades is undoubtedly attractive.

Back in 1962, Andy Warhol decided to set up a studio in Midtown Manhattan

(231 East 47th Street, to be precise). Rent was just \$100 a year, so easily affordable. The Factory quickly became known as the Silver Factory due to the copious amount of tinfoil that lined the walls, giving the location a kind of fractured and futuristic hall of mirrors feel. Aside from producing paintings here, Warhol also produced sculptures and films. The name 'Factory' is to be taken fairly literally. 'It wasn't called the Factory for nothing,' musician John Cale later said. 'It was where the assembly line for the silkscreens happened. While one person was making a silkscreen, somebody else would be filming a screen test. Every day something new.'

The building churned out work at a dizzying rate, down mostly to the army of workers Warhol assembled around him. At other times you could walk into another room and find the Velvet Underground rehearsing and revolutionising

contemporary music. Present around this time was a wet- behind-the-ears photographer by the name of Stephen Shore. He was only 18 as he stalked around the building photographing just about every angle of the place and the people that existed there.

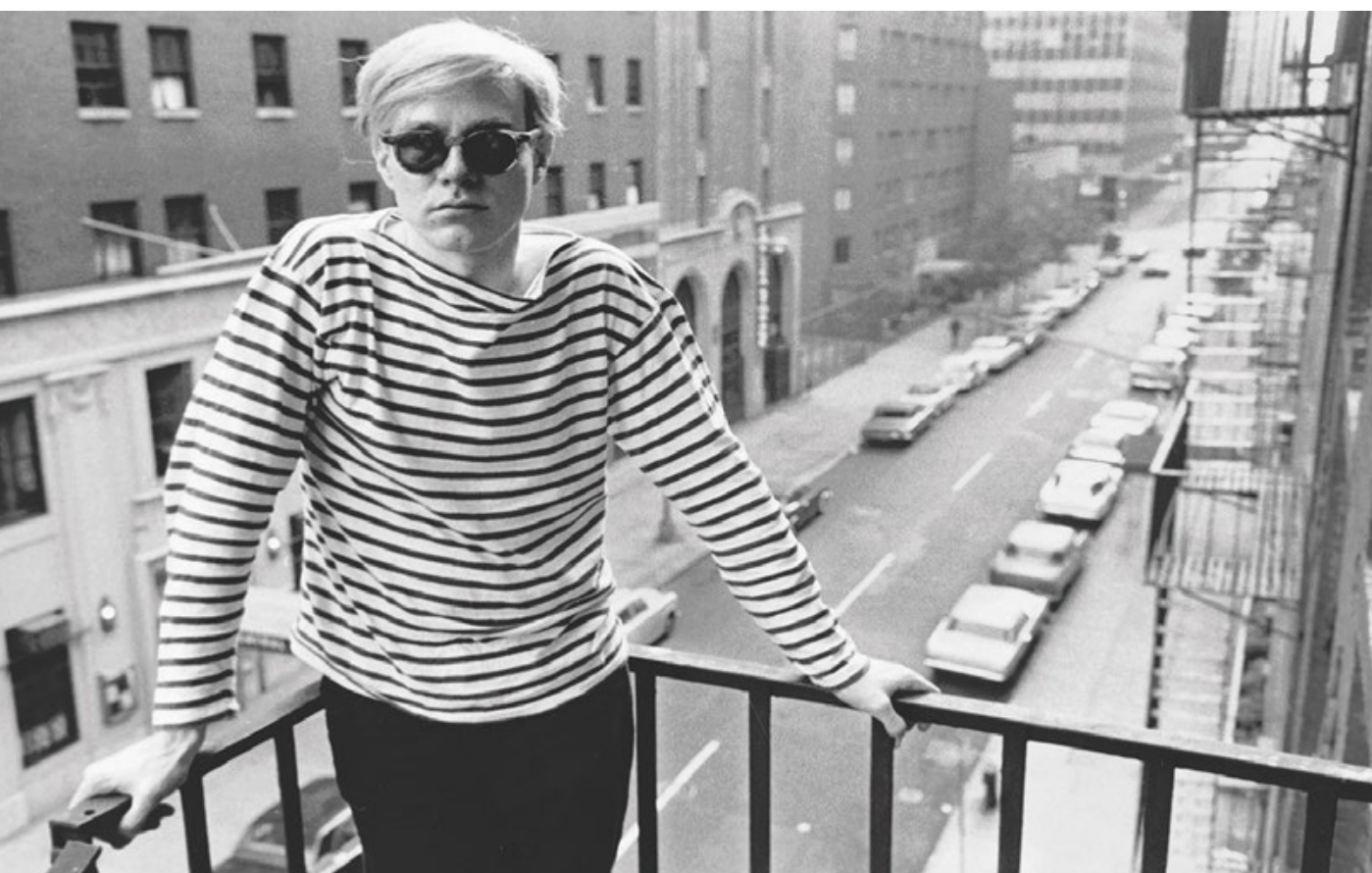
A slice of history

The first thing to note is that *Factory: Andy Warhol* is absolutely gorgeous. Its silver-lined borders and large size makes it a real pleasure to go through. The images themselves are genuinely fascinating. The whole cast of characters are here – Lou Reed, Billy Name, Sterling Morrison, Paul Morrissey, et al. Stephen Shore's images are quite beautiful. They seem to be more than just snapshots caught on the fly. Each shot tells a story, takes you right inside the circus, makes you feel for a brief time a part of what you're seeing.

What's more, we get a series of interviews with some of the aforementioned key players. All give you a real and honest insight into what it was like to exist in this space and witness Warhol spinning his magic within the Factory walls. Shore clearly has a reverence for this time, though was apart enough to ensure he never became overwhelmed or too caught up in the spell.

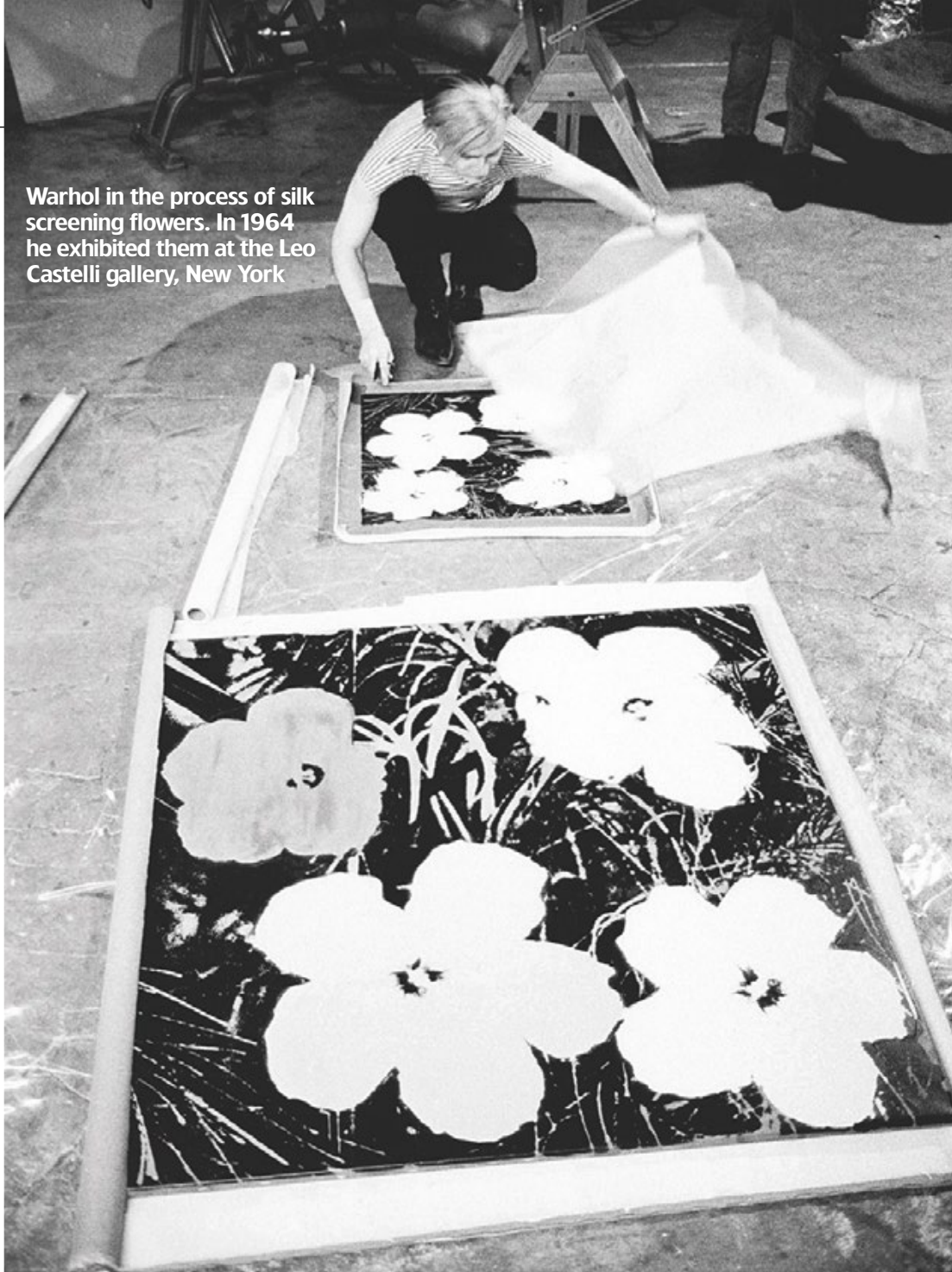
It's an attitude distinct from the borderline sneering of photographer Nat Finkelstein who published his own volume of images back in 1999 titled *Andy Warhol: The Factory Years, 1964-67*. Those images went on to be seen as the true iconic images of Warhol's Factory, something that seemed to stick in Finkelstein's craw, evidenced by the interviews Finkelstein conducted around that time where he denounced Warhol as, among other things, a shallow genius for shallow people.

Once he'd left Warhol's crew behind Stephen Shore went on to establish himself as perhaps one of America's most important photographers. His colour studies of the banal scenes of everyday America became deeply influential and sit alongside William Eggleston and Fred Herzog in the pantheon of image-makers who demonstrated that everyday life was full of wonder. You could argue that Warhol's dealing with everyday objects such as soup cans had an impact upon



Who else? Warhol captured on the fire escape of the Factory, 231 East 47th Street

Warhol in the process of silk screening flowers. In 1964 he exhibited them at the Leo Castelli gallery, New York



John Cale, Jan Cramer, Paul Morrissey, Nico and Gerard Malanga

‘Each shot tells a story and takes you right inside the circus’

how Shore began to see the world. But that’s very open to debate.

Warhol and his crew vacated the original Factory in 1967 as the city ordered that the building be torn down so they could build more apartment

buildings. They all relocated to Union Square West. The demolition of the original Factory was almost symbolic. Just one year later Warhol was shot by Valerie Solanas, driving Warhol into a state of paranoia and close to demolishing the carefully cultivated persona he had so long fought to maintain. It was the end of the ‘golden period’ of Warhol’s mystique. Luckily we have this curious record to preserve it.



Also out now

The latest and best books from the world of photography. By Oliver Atwell



© ROBERT CLARK

Evolution: A Visual Record by Robert Clark

Phaidon, £24.95, 240 pages, hardcover, ISBN 978-0-71487-1-189



IT SEEMS incredible that the issue of evolution is still open to debate. Thankfully, for those of us who tend to accept the evidence, we have books such as this absolutely gorgeous publication from Phaidon. Evolution can, admittedly, be a dry subject at times. However, this book

succeeds in making it utterly accessible through a series of wonderful essays and fascinating images. It really is the kind of book you could sit with for hours. The wealth of knowledge present seems to be limitless. The images by Robert Clark succeed in conveying the absolute majesty of evolution in all its intricate splendour. Clark takes us close in to each and every subject through a series of perfectly captured images that, at their best, make you feel very lucky to witness them. This is a perfect gift for the scientifically minded in your life. ★★★★★

Wildlife Photographer of the Year, Portfolio 26

Natural History Museum, £25, 160 pages, hardcover, ISBN 978-0-56509-3-952



IF YOU’RE a nature lover, you’re likely aware of the Wildlife Photographer of the Year. However, it’s worth being reminded that if you’re unable to make your way to the exhibition, then you have this

book to show you the true power of wildlife photography. This was perhaps one of the strongest years in the competition’s history. The winning images by Tim Laman and Gideon Knight were undoubtedly worthy. But it’s about more than just the top prizes. The shortlisted images were equally incredible and, most importantly, thoroughly inspirational. This is a great source of ideas for your own work. ★★★★★



Viewpoint

Andy Blackmore

Former newspaper picture editor Andy Blackmore takes aim at the prevalent attitude of many of today's publications – the curse of 'good enough'

Have you ever wondered why all newspapers and websites are beginning to look the same? Or that they don't seem as stylish as they used to? That they're devoid of the class of their classic forbears regardless of pedigree? And that those images seem to have lost their punch? All in all they seem lacklustre and lack a certain *je ne sais quoi*.

It's because they have been struck down with the curse of 'good enough'. Indulge me while I explain. The media is evolving, driven by a range of factors. However, one dominates. It's a bit like modern car design. Modern cars tend to look the same as they evolve. They are all taking roughly the same path with the ultimate destination being the most efficient design, sharing such common goals as fuel efficiency and safety.

It's the same for newspapers and websites – they are all hurtling down the same road and the driver's eyes are shut. With little regard for the reader, they grip the steering wheel and pray. They're all united by the same common denominator – the curse of good enough.

After my first ever shift as picture editor of the *Guardian*, as I crossed the Thames, with St Paul's Cathedral on one side and the Houses of Parliament on the other, I held my head back and just screamed, 'Yes! I've done it!' Today, I think I'd jump into the Thames, as a lot of water has passed under that bridge. Back then the quest for excellence was the order of the day. But that's no longer the case.

As the race to the bottom has gathered pace, it has all become about the bottom line. It's all about money, or more precisely the lack

Our newspapers have transformed as the quest for free pictures intensifies

Andy Blackmore is a photographer and former picture editor of *The Independent* and *The Independent on Sunday*. Visit www.massnegro.wixsite.com/andyblackmore

Do you have something you'd like to get off your chest? Send us your thoughts in around 500 words to the address on page 24 and win a year's digital subscription to AP, worth £79.99

of it. That quest for excellence is dead. Now a new mantra is the order of the day – if it's *free*, then it's good enough. With the accountants in the driving seat, we're on the road to nowhere.

The path of least resistance

Budgets have always been an issue, and while slide rules may have given way to spreadsheets, the sentiment – or to be more precise, lack of it – remains the same. But those who know the price of everything and the value of nothing have no place in the driving seat. There is no such thing as a free lunch. Now, they say you can't polish a turd, but you can cover it in glitter by harvesting material from Facebook, Twitter and Instagram. We're faced with vacuous, shiny, celebrity gilding, as talentless and crass editors take the path of least resistance, and litter their pages with superficial celebrity titbits.

Free content might seem free. But it comes at a cost – for 'good enough' is a curse, one that murdered the specialist journalist, while choking the freelance. It's culling the experienced with one hand as it deprives the young of a sustainable future with the other. Perhaps I'm just bitter and twisted, as 'good enough' ended my career. But I still believe to this day that good enough can never truly be *good enough*.



Social life

Here are some of our favourite images from the world of social media this week



Twitter



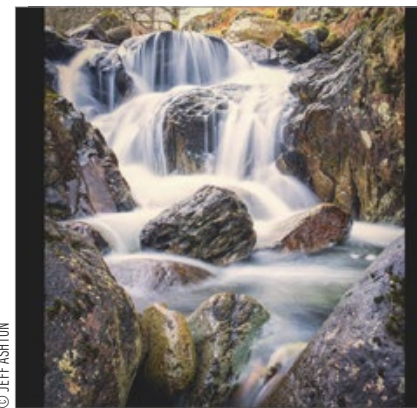
Stephen Dinsdale @SPDPhotography

The lone tree is a popular photographic trope, so it's always good to see a fresh take. Here we see Stephen Dinsdale's contribution, a textured image taken in the Yorkshire Dales.

Join the conversation @AP_Magazine



Facebook



Jeff Ashton

Jeff has shot this striking image of one of the beck's running into Haweswater Reservoir in the Lake District. The central boulder provides a perfect point of focus for us to tether our eye to in this visually sumptuous image.

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Instagram



usalptoy
@usalptoy

The US arm of the Landscape Photographer of the Year competition has highlighted this gorgeous image by James Watts, who travelled to Sparks Lake in Oregon. It makes you want to jump on a plane and see it for yourself.

Follow us at @amateurphotographermagazine

Flipside Trek Series

Geared for off-road



The versatile Flipside Trek series protects your camera and adventure gear for a day in the outdoors. Easy access to your gear with Flipside's patented design allows you to get your gear without putting the bag down. Effortless carrying with suspension system and straps, plus multiple attachment points allow you to scale up or down the gear you carry outside of your bag.



Find out more at
lowepro.com/flipside

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Sharp

shooters

Whether you shoot wildlife, travel, portraits or street, some of Britain's finest photographers reveal **40 power tips** for pin-sharp pictures every time



Ross Hoddinott

Ross Hoddinott is one of the UK's leading outdoor photographers. He is a multi-award winning artist and the author of eight books. Ross has been an Ambassador for Manfrotto and Nikon UK. Visit www.rosshoddinott.co.uk

Close-up

DEPTH of field grows progressively shallower at higher magnifications, so achieving a sufficient level of focus can be challenging. The zone of focus can be just millimetres when working in close-up. Even the selection of a small aperture, such as f/22, will not generate generous depth of field, so there is no room for error when placing your point of focus. Good technique is essential if you wish to achieve biting sharp results.

1 Increase the ISO

If you're shooting handheld, increase the ISO speed and switch your image stabilisation ON. The latest DSLRs have fantastic high ISO performance – I regularly use speeds of between 1600 and 3200 if I have to shoot without the aid of a tripod. Many modern macro lenses now boast vibration reduction technology, which greatly helps to eliminate the risk of shake, maximising sharpness.

2 Enable Mirror Lock-up

Have you heard of mirror slap? This is the internal vibration created when the reflex mirror abruptly swings up and out of the way of the path of light prior to the shutter opening. It's more likely to soften image quality when shooting at higher magnifications. Therefore, DSLR users should enable Mirror Lock-up whenever practical. Alternatively, shoot via Live View, as the reflex mirror is already locked up.

3 Focus manually

Autofocus can struggle to lock-on to small, nearby objects and miniature detail – particularly in low light or if the subject is low contrast. Therefore, assuming that your eyesight allows it, focus manually instead. You will find this a far more reliable method, particularly when combined with Live View. This allows you to zoom in to your point of focus (using the magnify button) for unrivalled precision. The use of Live View relies on the camera being fixed on a tripod.

4 Check the weather forecast

Any movement is exaggerated when shooting close-ups. So when photographing flowers and plant life outdoors, wind motion can be a major headache. Check the forecast – it's best to visit reserves, gardens and woodland

when wind speed is below 10mph. Alternatively, consider using a windbreak – even an umbrella can be helpful.

5 Keep your camera parallel to the subject

There is only one geometrical plane of focus. Therefore, to maximise depth



© ROSS HODDINOTT

© ROSS HODDINOTT

© BEN HALL



7 Use shutter priority mode

The easiest way to ensure you always keep your shutter speed fast enough to freeze your subject is to shoot in shutter priority mode. When photographing a moving subject, such as a bird in flight, I set a shutter speed of between 1/800sec and 1/1200sec depending on the speed of the subject.



Ben Hall

Ben Hall is one of Britain's foremost wildlife photographers. He is driven by the need to protect and preserve Britain's fragile ecosystems, as testified by his work for the RSPB and other conservation organisations. Visit www.benhallphotography.com.

Wildlife

WILDLIFE photographers don't have the luxury of being able to control the light, and in the UK conditions are often far from ideal. More often than not, slow shutter speeds and high ISOs are forced upon us, making maximum sharpness a constant challenge. Throw a moving subject into the mix and it becomes even trickier! Fortunately there are plenty of techniques I employ to ensure I come away with sharp shots.

6 Utilise the most accurate focusing point

The most accurate focusing point on a DSLR is in the centre. If my focus is struggling to lock on for any reason such as falling snow, an obstructive foreground or low light, I switch to the single-point spot autofocus in the centre on my Canon EOS-1DX.



8 Try back-button focus

Using back-button focus can greatly increase the chance of capturing sharp images. Switching to back-button focus means that I can keep my camera in predictive focus mode (AI Servo for Canon, AF-C for Nikon) at all times. As soon as I release the focus button, the focus is locked, so it can be used for both static and moving subjects.

9 Match shutter speed to focal length

Keep your shutter speed equal to the reciprocal of your focal length (or faster). In other words, when using a 500mm lens ensure your shutter speed is at least 1/500sec. Keeping this in mind helps as it's easy to get caught out as light levels start to drop.

10 Don't be afraid of a little noise

I would rather have a sharp image that suffers from a little noise, than a soft image that is completely clean. I'm never afraid to shoot at high ISOs if the conditions demand it. You can reduce noise at the post-processing stage, but it's impossible to make a soft image sharp.

of field, position your camera parallel to the subject. By doing so, you will place more of your subject within this plane of sharpness. Positioning your camera in this way will enable you to select a larger aperture while still recording your subject in acceptable focus.



Ken Kaminesky

Ken Kaminesky is a travel photographer, Fujifilm Global Ambassador, Zeiss lens Ambassador, writer, consultant and entrepreneur with more than 20 years' experience in the photo industry. He is the co-founder of Discovery Photo Tours. Visit www.discoveryphototours.com

Travel

TRAVEL photography puts photographers in ever-changing situations and that can mean having to deal with anything from landscapes (where everything might need to be in focus) to portraits (where you might want to use selective focus). No two days, or even shoots, are the same, so you need to have your tools and techniques ever-ready to meet whatever situation arises.

11 Experiment with focus stacking

Focus stacking, or focus blending, is a Photoshop technique that allows you to combine multiple images of the same scene shot at different focus distances into one final image. The end result will be in focus from foreground to background. All of the images used in the stack will be perfectly in focus in one area of the photo and then only those regions of the individual images will be used in the blended final photograph.

12 Apply sharpening with care

Using proper sharpening techniques at the end of your workflow is a must. There are third-party sharpening plug-ins from companies like Macphun, Nik Software, and On1, that make things easier. You can also use Smart Sharpen, High Pass, and Unsharp Mask techniques in Photoshop to do your final sharpening. Be selective in applying the sharpening by using layer masks.



13 Use focus peaking

One of the best new features in today's mirrorless models is focus peaking. This feature allows you to manually focus your lenses to near perfection. Focus peaking detects the highest contrast areas of the scene and highlights them with a bright colour of your choice. The more pronounced the colour is, the more in focus the area is.

14 Keep your distance

Use a cable release, remote trigger, or self-timer to fire the shutter on your tripod-mounted camera. Even the slightest movement can affect the sharpness of the end result. The bigger the camera, the more important this is.

Large, heavy 35mm DSLRs and medium format cameras are more prone to camera shake.

15 Visit the optician

Get your eyes tested and see if you need prescription glasses. Even though I had laser eye surgery years ago, and my vision was perfect afterwards, it has now deteriorated slightly. I also need reading glasses to read the camera dials and controls. Don't let your eyesight hold you back. When I'm out shooting I always bring my reading glasses and either use my distance glasses or adjust the camera diopter to my prescription. When you see clearly, you'll take better photos.



© DAVID CLAPP

Use long focal length lenses



David Clapp

Landscape and travel photographer David Clapp began his creative journey with music, playing guitar and using sequencing software. His move to photography was second nature. He works for magazines, and teaches workshops. Visit www.davidclapp.co.uk

Landscapes

LANDSCAPE photographers face a number of challenges when it comes to focusing, the main one being obtaining front-to-back sharpness. I remember the word 'hyperfocal' sending me into a spin, but in its essence it's simply the ability to produce sharp images by maximising depth of field, utilising areas both in front of and behind the focal plane. It seems strange to shoot in this way at first, but technology certainly helps to get the shot nailed.

16 Get used to Live View

Wideangle lenses are essential in the landscape world, but they can be difficult to focus. Get used to using Live View to see exactly where the focal plane is in the frame. Start by placing the 10x magnifier on the furthest point away (usually infinity) and then turn the focus ring. You will be surprised how much is in focus, even at f/4.

17 Activate depth of field preview

Live View can be combined with the Depth of Field preview button to check focus. Remember, even if the aperture is set to f/16, most cameras will only render the scene at the lenses widest aperture (f/4 for instance) until the depth of field preview is pressed. Magnify the corners and experiment to see the depth of field changing.

18 Experiment with long focal length lenses

You will be surprised how much depth of field you can achieve with long focal length lenses. It's entirely possible to obtain front to back sharpness with lenses of 100mm or more by calculating the hyperfocal distance (see tip 20). You can make a big difference by using this method and experimenting with different apertures.

19 Pay attention to the lens scale

When you are attempting to achieve maximum sharpness using the hyperfocal distance pay particular attention to the lens scale. For a quick fix, remember where the focal plane is on your lens scale. Test all of your lenses, using the hyperfocal distance, at different focal lengths, and then use your mobile phone to take photographs of the focal position.



20 Calculate the hyperfocal distance

Hyperfocal distance is easy with Live View. Focus on the furthest point in the image (let's say the horizon) using 10x Live View. Set the aperture to f/16. Now depress the depth of field button and hold, turning the focusing ring so that the focal plane is brought towards you. The horizon will slowly fall out of focus. Adjust as necessary to get things critically sharp. Now check the foreground. The result: maximum depth of field and sharpness.



© DAVID CLAPP

Using a tripod and remote release helps to ensure your set-up remains rock steady



© LINDA WISDOM

21 Follow the light

Increase your ISO and seek out well-lit areas – spots near street lamps or shop windows, for example – to prevent slow autofocus and focus ‘hunting’. Hold your camera steady, especially when using slow shutter speeds.



Linda Wisdom

Linda Wisdom is a successful London street photographer. Her work has been exhibited, published and sold around the world. Her pictures are a blend of urban landscapes and candid human elements. Visit www.lindawisdomphotography.co.uk

Street

IT CAN be said that sharpness in street photography is perhaps not as important as it is with other genres such as landscape or portraits. There can be more mood and emotion in a blurry, soft-focused street shot than that of a tack-sharp one. However, if you strive for a high quality image, but use unsuitable settings, lenses and/or technique you may face challenges such as out-of-focus subjects or blurry photos.

22 Use small apertures

Shooting wide open means that it's not always easy to get your subjects in focus, especially if they are moving. What's more, sometimes you will want to have the background in focus to give your subject some context. These are all great reasons to use small apertures for street work.



© LINDA WISDOM



Manually setting your focus point to a specific distance can help to keep the subject sharp

23 Try zone focusing

Zone focusing involves switching your camera to manual focus, setting the focus point to a specific focus distance (say 2–3m away) and shooting your subjects around that distance from the camera. With zone focusing and a prime lens all you have to do is spot something photogenic, get into position, frame the shot, and click the shutter-release button.

24 Shoot with a wideangle prime

Where possible, shoot with a wideangle prime lens (28mm or 35mm). These lenses give the appearance of greater depth of field, which means that if you

miss your desired focal point much of the scene will still be acceptably sharp. This is especially handy for street work, because the action is often constantly changing, and mistakes are very easy to make.

25 Freeze motion with fast shutter speeds

A shutter speed of 1/250sec or more is ideal for freezing moving subjects, and avoiding unintentional motion blur. Higher shutter speeds also help to prevent accidental camera shake, especially if your lens does not have built-in image stabilisation. Street photographers usually handhold their gear, so this is particularly important.



Simon Kennedy

Simon Kennedy is an architectural photographer, architect and teacher at the Bartlett School of Architecture in London. He sees photography as a way to explore and test ideas. Visit www.simonkennedy.net

Architecture

FOCUSING on buildings is certainly easier than some subjects – after all, they are large and tend not to move around much! But there are still challenges: getting the whole of a long façade in focus can be tricky, for example, especially if you are at an oblique angle to it. In addition, you are often photographing a space or a corridor rather than a subject, so deciding where to put the focus point can be tricky.

26 Use the right aperture

Aperture selection is critical. Too wide an aperture will mean you will not have enough depth of field, so parts of the image will be out of focus, and too narrow will mean your image will lose sharpness due to diffraction effects. In my experience a good starting point is f/8–f/11, but you will often need f/16 or f/22.

27 Take your time

If you want your images to be sharp, take your time making them. Think about what you are doing, think about your tripod, your technique and your subject. Modern cameras can control the relationship between aperture, ISO and shutter speed so well now that it's tempting to go around liberally taking shots. This is definitely not the recipe for sharp images – being in control and understanding this relationship is vital.

28 Know your lenses

Different lenses have different sharpness at different apertures. A wideangle shift lens, such as Canon's 24mm TS-E Mark II is probably sharpest at around f/8, but for additional depth of field I tend to use it at f/11. The 70–200mm f/4L is sharp from f/4, and only changes a little when stopped down. Test your lenses for sharpness at different apertures

Using a tilt-shift lens allows for perspective correction



29 Try a tilt-shift lens

Architectural photographers often use tilt-shift lenses. These have additional functionality to allow perspective correction but they are also very sharp. They tend to be optimised for use at around f/11, which is ideal for architectural photography. Obviously you can shoot with other types of lenses but wideangles with sharp corners are unusual, and can be expensive.

30 Avoid motion blur

Using a tripod and remote release is essential in architectural photography. You are likely to be using low shutter speeds due to the narrow apertures required, especially when shooting interiors, and without a tripod you will get blurred results. Use a remote release to avoid moving the camera with your finger when taking the shot and causing motion blur.

When you're shooting interiors, and using narrow apertures, a tripod and remote release are essential



I tend to use wideangle shift lenses, such as Canon's 24mm TS-E Mark II, at f/11





My wedding photography is candid, which often requires me to handhold my kit

© KEVIN MULLINS



Kevin Mullins

Kevin Mullins is a wedding photojournalist based in Wiltshire. He shoots weddings in a candid fashion, meaning that he does not direct, pose or guide his clients at all.

Visit www.kevinmullinsphotography.co.uk

Weddings

WHEN you're shooting weddings, it can be tricky to get the sharpness you want from every single image. It's not realistic to ask people at a wedding to 'stand still', or 'look at me', and often your subjects are moving very fast, dancing or (as is often the case with children) darting off in different directions. Having a steady hand and a keen eye can help to overcome these challenges.

31 Use Face/Eye Detection

If your camera supports Face/Eye Detection, then use it. My Fujifilm cameras are brilliant at this. You need to be fast with your camera skills. Move in quickly; take the picture and then retreat, allowing the moment to continue uninterrupted by you.

32 Look for feeling first

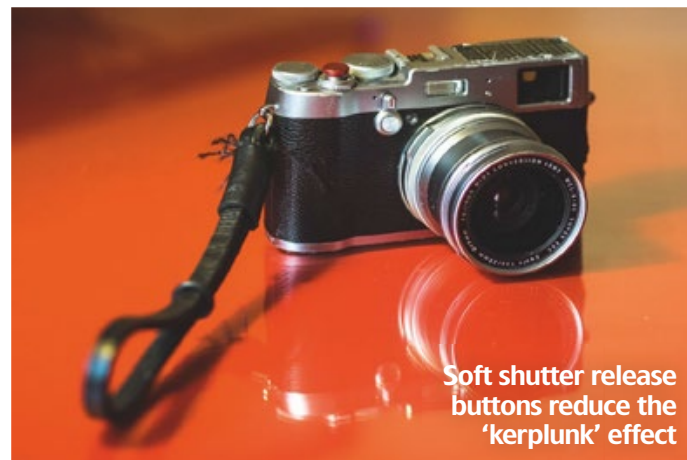
It's not the end of the world if the picture isn't pin-sharp. An image needs to have feeling first, and technical excellence second. Human emotion is what drives weddings. There are few events more emotional in people's lives and it's important to capture that in your wedding coverage.

33 Pre-focus and wait for the action

For very fast moving scenes, you might be better off pre-focusing on a point and waiting until the action enters that area before shooting. Use your skills as a photographer to position yourself accordingly for the image you are about to capture. For example, get down low to shoot children, rather than shooting down at them from above.

34 Hold your breath

My style of wedding photography (mostly candid and unposed) involves handholding the camera, so I need to keep my hands seriously steady. If you're shooting at slow shutter speeds, hold your breath when you release the shutter. I use small cameras (Fujifilm mirrorless models) which allow me to react quickly, and yet remain relatively discreet.



Soft shutter release buttons reduce the 'kerplunk' effect

© KEVIN MULLINS

35 Attach a soft shutter release button

If your camera will accept one, use a soft shutter release button. These little devices help to reduce the 'kerplunk' effect you can experience when pressing the shutter release button.

Pre-focus and wait for the action to enter the frame

© KEVIN MULLINS





Dave Kai Piper

Fashion and portrait photographer Dave Kai Piper shoots everything from lookbooks to commercials. He is a Fujifilm X-Photographer, and has written for a wide range of blogs and magazines. Visit www.davekaipiper.com

Portraits

WHEN you're working in ambient light, and with wide apertures, focusing can be tricky. I shoot manual with the Fujifilm system with focus peaking set to high, and I use the back-button focus to pull focus when I need it. I have found a system that works for me and I would encourage you to do the same. When you're comfortable with your equipment it will give you confidence in your abilities.

36 Use gear you can trust

When it comes to equipment it's important to know your kit and to use gear that you can trust. If you're shooting with bad glass, or a lens that's unreliable it will immediately impact on your confidence to deliver, as well as the results. For me this is a huge factor.



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37 Get to know your limits

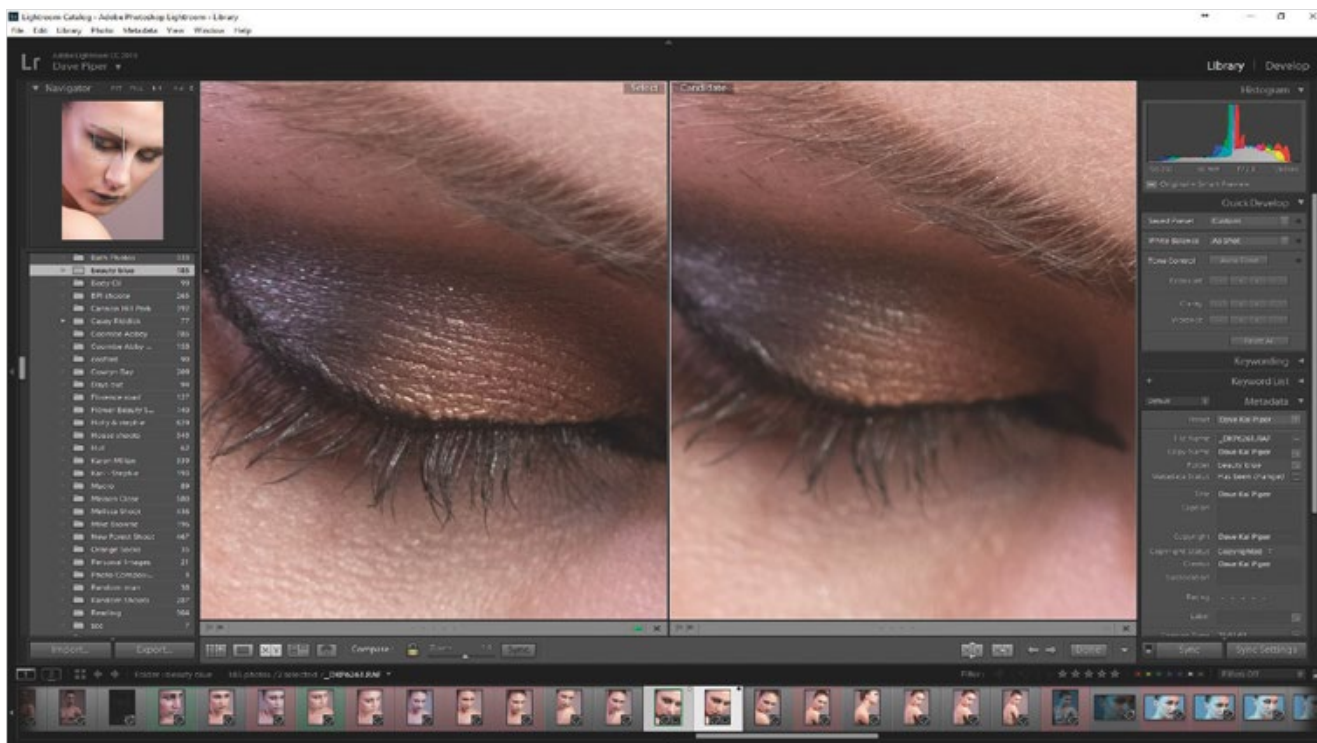
Find your limits before you miss a shot you really need. Knowing when camera shake is most likely to occur, for example, will allow you to take steps to reduce the problem. Try the 'rocking' system: take pictures in sets of three – rocking forward half an inch each time. Move forwards a tiny bit – pause, breathe, shoot and repeat. Remember – make a mental note of the depth of field you have to work with and the range in which your subject sits.

When you're shooting at wide apertures, such as f/3.2, take your time

© DAVE KAI PIPER

38 Take it easy

Focus for the eyes and double tap. Breathe softly and don't rush anything. If you start to rush you're likely to introduce a small wobble that may throw the focus out – especially if you're shooting at f/4 or wider. Depending on your focal length and aperture, the slightest movement from you or your subject can affect the focus.



© DAVE KAI PIPER

39 Take advantage of new technology

Most modern cameras will let you check focus though Live View. Fujifilm models are great for this, and they offer focus peaking too. This is a feature that videographers have been using for years. As camera technology moves on, methods for checking focus are constantly improving.

40 Take full control

I love shooting in manual focus as it gives me more control. The AF system will often focus on the closest thing to the AF box, which sometimes means locking on to the eyelash and not the eye. If you shoot in manual and switch on focus peaking you will have maximum control over what is, and what isn't, in focus.

Grays of Westminster®

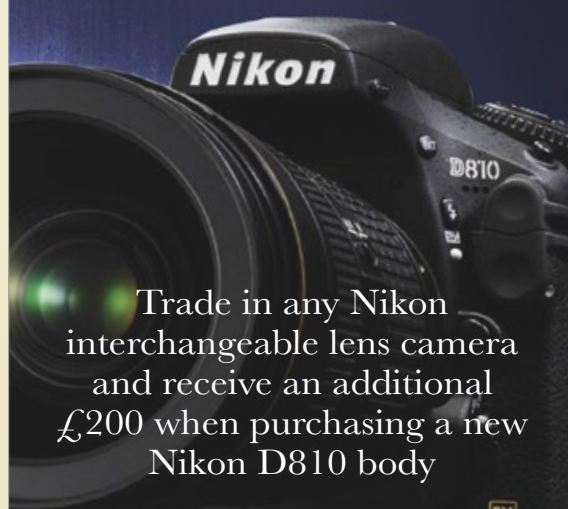
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LETTER OF THE WEEK

Good knight

A knighthood for Don McCullin was long overdue. His extraordinary dedication in highlighting the grim reality of war and his courage amid the dangers he faced, is exemplary. His images remain as spellbinding as ever.

But when will we see the once *enfant terrible* of photography David Bailey rewarded with the same honour? With all due respect to McCullin, Bailey's name is synonymous with photography no matter who you talk to. I've heard unfounded rumours that Bailey had already turned down a knighthood. I hope they're untrue,

because the world of photography owes him so much. He often lives up to his grumpy image, yet can be wonderfully self-deprecating at the same time. I feel to further deny him the ultimate honour would be grossly unjust.

Mick Bidewell, Newcastle upon Tyne

With Bailey, it is quite possible – he's anything but predictable. Sir Don's knighthood is richly deserved and let's hope some more top British photographers get a similar honour next year – Geoff Harris, deputy editor

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APOY

When submitting an image for a competition such as Amateur Photographer of the Year, are there minimum criteria that need to be met? How much, if any, enhancing is acceptable? Is there a minimum/maximum size JPEGs have to be, and does the type of camera matter – can a compact compete with a DSLR?

Stephen Bolt, Taunton

Thankfully, the judging panel consists of individuals with a variety of aesthetic tastes, meaning that every image gets a look in. The camera is, to be blunt, totally irrelevant. A winning image could be taken on a fancy DSLR, an iPhone

or even a toy plastic camera. The judges will look for an image that shows imagination, both in terms of the creative nature of the image and the way in which the brief has been interpreted. Keep that in mind with post-processing. It's fine to use in APOY, as long as it's made clear to us in your entry information. As for the size of the image, you'll have to stay tuned. APOY is undergoing a bit of an overhaul this year, and we'll be talking more about that in March and will also be able to let you know exactly how you can submit your images and how large they need to be – **Oliver Atwell, senior features writer**

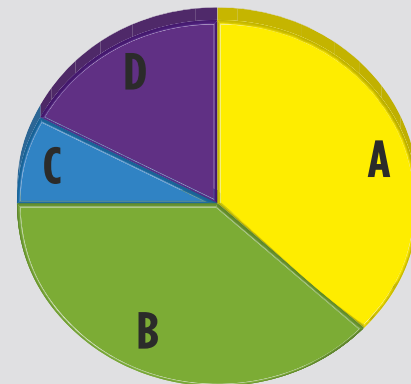
Lens sense

Thank you for the excellent review of the new Sigma 12-24mm f/4 DG HSM Art lens (AP 7 January), though for £1,000 more than the previous model, one should expect a significant improvement. You say there's nothing to stop the lens being

used with an APS-C DSLR. For Canon APS-C users the EF-S 10-18mm f/4.5-5.6 IS STM lens makes much more sense – it goes 10° wider, features image stabilisation, a shorter minimum focus, a 67mm filter thread, an aberration and distortion correction profile in DPP and currently costs around £1,200 less. The Sigma lens is slightly faster, but it's also nearly 5x the weight, about 3x the volume and doesn't accept filters.

Harry Gill

I should perhaps start by clarifying that the new Sigma 12-24mm f/4 DG HSM Art lens has been designed for today's era of ultra-high resolution DSLRs and by that I refer to professional full-frame models such as the Canon EOS 5DS and Canon EOS 5DS R. As you point out, the review mentioned the lens is compatible with Canon's APS-C DSLRs, but in reality it'll rarely find itself being coupled to a camera of this type. Users of Canon APS-C



In AP 21 January we asked...

Do you provide supplementary food for wildlife during winter to photograph it more easily?

You answered...

A Yes, it's something I enjoy doing	37%
B Yes, but I also make sure that my garden offers natural sources	38%
C No, because I'm not sure what to feed them	8%
D No, I don't agree with it	17%

What you said

'I feed all year. The local farmer did a lot of damage years ago and resources have been lost.'

'No. I feed them because they need it. It is more interesting to photograph birds away from feeders.'

'I don't normally photograph the birds in the garden, but we recently had a heron come to call. It stood next to a metallic heron sculpture by the pond, and I managed a few shots before it flew off. Magical!'

'I enjoy nature photography, but not bird feeder photography; the food is for their benefit, not mine.'

'I put out seed for the finches and tits, fat balls for cold-weather energy, an apple for the blackbirds, and have many berry-bearing trees and shrubs. I really could do with a 600mm lens to get the shots I'd like...'

Join the debate on the AP forum

This week we ask

Do you still own and use film cameras?

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Top 5 reviews

What's trending on the AP website

Fujifilm X100F review: hands-on first look

Andy Westlake
January 24, 2017

8 shares

Andy Westlake examines the fourth generation of Fujifilm's classic fixed-lens compact



- 1 Fujifilm X100F first look review
- 2 Fujifilm X-T20 sample image gallery
- 3 Leica M10 first look review
- 4 Fujifilm GFX 50S first look review
- 5 Panasonic Lumix TZ100 review

➤ DSLRs such as the EOS 750D or EOS 80D are well catered for when it comes to wideangle zooms, but it's also worth mentioning the Tokina 11-20mm f/2.8 AT-X PRO DX lens (£499) – a faster alternative well suited to low-light situations, but not quite as wide, or as affordable, in terms of its focal range and price. Canon APS-C users looking for an affordable, portable wideangle zoom for less than £250 will struggle to find a lens better than the EF-S 10-18mm f4.5-5.6 IS STM – Michael Topham, deputy technical editor

Even more old gear
Stuart Pratt's letter in this week's issue (AP January 28) rather stole my thunder about reviews of old gear, but can I take it a step further with lenses, especially now that legacy manual-focus lenses are being used in greater numbers. Regular reviews on what's good and bad in this area would be great.

Nigel Cliff, West Midlands

Definitely – we are running a major feature on old film cameras and lenses soon

and rest assured that AP, unlike other photography magazines, doesn't just focus on digital. Like the pun there? Geoff Harris, deputy editor

Identity parade

My wife asked me to read AP 21 January carefully so that I could tell her what kind of bird was on the cover, but the image is not referred to inside. I tried using the two bird identification websites you suggest, but did not have enough information about the bird (size, habitat, etc.).

Also, the wonderful image of the urban fox on page 7 looks a little strange because its back end appears to be transparent. Is this possibly a long exposure, during which part of the subject moved? I'm just curious; this is an example of when the exposure details would be welcome.

Chester Willey, via email

The bird that graced our 21 January cover was a waxwing – a plump little bird with a black mask, and wings that feature delightful yellow, red, black and white markings. These birds do not breed in the UK, but during winter they often



The waxwing in all its glory on AP's 21 January cover

arrive here in large numbers – known as irruptions. This year we have seen so many, the RSPB has declared it a 'waxwing winter'. The image was taken by natural history photographer Laurie Campbell.

The shot of the fox on page 7 by is indeed intriguing. It was taken by Kyle Moore who, despite being just 18, has already won multiple awards for his work. We try to include as much technical information as we can but, unfortunately, on the news pages there often isn't room for this – Tracy Calder, technique editor

ANSWERS TO THE CHRISTMAS CONUNDRUMS (AP 17-26 DECEMBER) 1 A 35mm f/2.8 lens on Minox 35 cameras. You may have been thinking of the Minotaur. Google was. 2 The Japanese word 'bokeh' can be translated as any of the three. 3 The Hektor. Max Berek was the designer of the lens and the owner of the dog. 4 False: It was the biggest volcanic explosion in Europe in the Minoan era and is a Greek island. 5 (1) The sulphur in the mustard acted as a sensitising agent. Then the gelatin (derived from cows) was turned into film emulsion. 6 Inventing digital photography. The poet was Siegfried Sassoon. 7 Ilford Photo or Harman Technology Ltd. 8 Enlargers, made by Gnome Photographic Products in Cardiff. 9 Nectar. The rest are all lenses. 10 George Bernard Shaw. 11 Because it's 35mm. So-called 35mm film was created by splitting original Kodak film longitudinally: the film was 23/4in (69.85mm) wide. But who's going to ask for 34.925mm film? 12 5 and 5.6. These are third-stop rests. 13 Advanced Photo System, 1996. 14 It's Greek for cuttlefish. Sepia pigment was originally made from cuttlefish ink. 15. Hernandez. 16 Rhein II. 17 Cyan, Magenta, Yellow, black. (B was already taken for blue, as in RGB). 18 17.3x13mm, an area equal to the imaging area of a video camera tube 11/3in in diameter. No wonder they just call it Four Thirds. 19 Voigtlander Zoomar 36-82mm f/2.8, 1959. Zooms for cine lenses date from the 1930s or earlier. 20 Sony in 1981. The Mavica (MAgnetic Video CAmera) was in effect a 'still video camera' with a rousing 570x490 pixels. The winners will be printed next week's issue.

In next week's issue On sale Tuesday 14 February

Correcting lens distortion

Turbocharge your lens performance and find its sharpness sweet spot



Sony A6500
The flagship APS-C mirrorless camera from Sony

Five a day
Carl Warner's creative foodscapes

Tilt-shift group test
The best lenses for pro-looking building shots and fun creative effects

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AP's videography website, The Video Mode, has again teamed up with Canon, Tiffen and Rotolight to present two exciting workshops at the iconic Pinewood Studios, home of the British film industry, James Bond and, currently, *Star Wars*.

Aimed at DSLR and mirrorless camera

users of any brand, as well as video camera owners, both workshops are all-day events where you'll get the chance to play with all the latest Canon, Tiffen and Rotolight kit, talk to their experts and enjoy hands-on tuition from a Canon video ambassador.

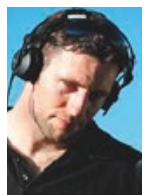
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Beginners' Video day

Tuesday 21 February

Your Expert Guide: **David Newton**



Professional photographer / videographer David is a world travelling content creator and educator with a speciality in the subtleties of the Canon. The former technical editor of *EOS Magazine* and Canon Professional Network (CPN) he has shot video with everything in the Canon range from CSC to C-Series. Dave will focus on the equipment and how to get the best out of it; what all the settings do and which ones to use, as well as the basics of constructing a video.

Advanced Video day

Wednesday 22 February

Your Expert Guide: **Simeon Quarrie**



Simeon is known for his creativity and storytelling in both cinematography and photography. Demand for his unique commercial and wedding work has taken him around the world. He is a prolific educator with an infectious enthusiasm, and his work features on top industry blogs. Simeon will focus on the art of telling a story, working to a shot list, overcoming the challenges of the location, creative lighting, turning pro, and more.



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For more information go to
www.thevideomode.com/pinewood

Green peace

The winner of the International Garden Photographer of the Year 2016 is **Lee Acaster**. He talks to **Oliver Atwell** about his victorious image

Lee Acaster is a name that be familiar to some of you. He's featured a few times in the pages on AP, and in 2015 took the overall prize in AP's Amateur Photographer of the Year competition. Now he's won the 2016 International Garden Photographer of the Year title. He takes home a prize of £7,500. We chatted to him about how it feels to win yet another competition.

How does it feel to have won IGPOTY?

I'm absolutely overwhelmed to have won the competition, particularly with this image as it is very much a shot I took to please myself, and I also think it is quite brave of the IGPOTY judges to choose something that is probably a little less conventional than might be expected. Hopefully, it shows that there is the potential to create interesting images almost anytime and anywhere, which is a great message for the many photographers out there who may not have access to the more conventionally beautiful landscapes.

Can you talk me through this image? What exactly are we seeing here and why did you identify this scene as something that could work as an image?

I had a day to myself in Snowdonia prior to joint-leading a Greg Whitton workshop, so decided to

explore Cwm Bychan, a location I hadn't been to before. It was a rather grim and grey morning so traditional wide landscape shots were not really on the agenda, and in these circumstances I usually look to find details in the landscape that interest me. More often than not, that will mean trees.

I loved the variety of blackened and contorted specimens around the lake, and this birch in particular caught my eye. Hailing from the flatlands of East Anglia I rarely get much opportunity to shoot from an elevated angle, but on this occasion I had the opportunity to frame it against the dark water below, which was perfect for creating contrast with the remaining autumn leaves. The drizzly overcast conditions meant the light was very flat and subdued, which can work really well to create intriguing looking abstract images of trees, while the wet conditions also added some nice highlights to the branches to retain just enough definition so as not to be unrecognisable. I think the temptation is often to shoot much wider to include the full tree in an image, but I really enjoy getting a much tighter composition to really focus on the forms and textures.

What kit did you use to shoot this? What about this combination of camera and lens work for you?

The image was taken using a Sony

Alpha 7R, with a Sony FE 70-200mm f/4 G OSS lens. The 200mm focal length helped add to the painterly feel by compressing the foreground with the water behind to give a much more two-dimensional image. The other benefit being the long lens hood enabled me to shoot in the rain without the constant battle to keep the front elements dry.

Did you use any other accessories here? If so, why?

I always use a tripod (in this case a Gitzo GT3542XLS Systematic with a Manfrotto XPRO Geared 3-Way Head). Apart from the obvious benefits of being able to use slower shutter speeds, it also helps slow me down when taking photographs, something I find invaluable as it makes me give much more consideration to my composition.

Your images are quite distinctive in their aesthetic. What exactly attracts you to a scene?

It's something I'm asked quite often, but find quite hard to put in to words. I think I can best sum it up as trying to add a little drama or tension into my images. This can either be quite an obvious thing, with stormy skies or quirky buildings and locations, or more subtly such as in this shot, where there is hopefully a sense of intrigue as to what the subject is, making the eye linger on the image.

When deciding what to shoot it's often just a case of looking around as I walk along, where little cameos of the overall landscape that appeal to me will hopefully be revealed.

What kind of post-processing do you tend to use?

I do practically all my processing in Lightroom for speed and ease more than anything. I work on some images quite heavily to convey the mood I want to, and some much less so. I'm not precious about remaining faithful to the original scene, the final image is much more important to me. I rarely add or remove anything from a shot, I mainly play with white balance, highlights and shadows, and colours to achieve the mood I want.

What are the benefits of entering competitions?

I think there are both real benefits and pitfalls to photographic competitions, dependant upon your attitude to them. I've been very fortunate to have had some



© LEE ACASTER/IGPOTY

Above: Lee's IGPOTY-winning image showing a tree detail from Snowdonia in Wales
Sony ILCE-7R, 70-200mm, 0.6secs at f/11, ISO 100

'I think it is quite brave of the IGPOTY judges to choose something a little less conventional'



successes, including winning last year's Amateur Photographer of the Year. Personally speaking, entering them has really helped me to improve as a photographer. I find self-evaluation of my photography quite difficult, so even the act of choosing images for competitions has been really useful for me, making me really examine my shots and deciding what I like or dislike about them. I'm pretty pragmatic though, so the many times I've experienced rejection doesn't really sit heavily on me and I quickly forget about it and move on. I think if you see it this way, or even

better, use it as a way to improve your photography, then they are great fun. If you enter them with expectations of success however, then that could be very disheartening. If I were to give one piece of advice it would be to shoot and submit whatever gives you pleasure, if the judges like it then that's great, and if they don't that doesn't mean it is wrong or a worse photograph than any other.

What are you up to next?

I'm only an amateur photographer, so the day job and my family always takes priority, although I



Lee has won numerous awards, including AP's Amateur Photographer of the Year 2015 competition and the International Garden Photographer of the Year 2016. Visit www.leeacaster.com

really am so incredibly lucky to have had a number of fantastic opportunities over the last year or two, including having a limited edition book published – *The Forest* – by www.kozubooks.com. I will also be joint-leading another Snowdonia autumn workshop with the landscape photographer Greg Whitton, which are always great fun. For further information visit www.gregwhittonphotography.com

Turn the page to see more amazing images from the International Garden Photographer of the Year competition.



© VYACHESLAV MISHCHENKO/IGPOTY

Garden greats

We reveal the top images from this year's **International Garden Photographer of the Year** competition

Vyacheslav Mishchenko
Macro Projects, Highly Commended

Fujifilm FinePix S200EXR,
31.30mm, 1/320sec at f/6.4,
ISO 400, Marumi macro filter

As the ant dangles over the surface of the pond to drink, we're rewarded with an image that benefits from the delicate reflection, which balances the overall composition.



© JOHN K. PUTTMAN/IGPOTY



© ANIL SUD/IGPOTY

Anil Sud
Breathing Spaces, First Place

Canon EOS 5D Mark III, 70-200mm, 1/13sec at f/16, ISO 100

⬆ The Maroon Bells are two peaks in the Elk Mountains close to the ski resort of Aspen, Colorado, USA. Here we see there was a brief gap in the clouds, which revealed the jagged surface of the mountain. This has added an extra point of interest to accompany the vivid autumnal aspens.

Jacky Parker
Macro Projects, Highly Commended

Nikon D700, 105mm, 1/1000sec at f/8, ISO 250

➡ Here Jacky took several images with a view to combining two in post. She used a layer mask in Adobe Photoshop, using different opacities and blending to paint away small areas to reveal the delicate pink flowers.

JK Putnam
Breathing Spaces, Finalist

Canon EOS 6D, 16-35mm, 15secs at f/22, ISO 100

⬅ Mount Desert Island, part of Acadia National Park in Maine, USA, has a long geologic history. This has resulted in several natural patterns, such as this crack that over time has filled with molten rock.



© JACKY PARKER/IGPOTY



© LINDE STEWART/IGPOTY

Linde Stewart
Macro Projects, Finalist

Nikon 3100, 18-55mm, 5secs at f/3.6, ISO 100, UV filter

◀ Linde has taken hundreds of photographs of ranunculus flowers. Every year when they come out she attempts to find a new angle or a new reason to grab the camera. This is one of her all-time favourites. It's certainly an absorbing image that draws you in. The obvious thing to do would have been to face the flower head on, giving us a conventional composition. But shooting from this angle has revealed the gorgeous textures, forms and colours of the specimen.

Marcio Cabral
Wildflower Landscapes, Highly Commended

Nikon D200, 12-24mm, 4secs at f/11, ISO 100

◀ Here we see that the soft darkness of dawn is a perfect contrast to the golden grass and pink hues of the painterly foreground. Marcio deliberately intensified the colours using lens filters to create a striking landscape of Chapada dos Veadeiros National Park in Goiás, Brazil, that stands out due to its almost unreal atmosphere.



© MARCIO CABRAL/IGPOTY

These images and more are now on display at Kew Gardens. The hardback book featuring all of the selected images is available now and priced at £25. IGPOTY 11 will see the competition launching its new website and will also feature four new categories – Abstract Views, Outdoor Living, My Garden Stories and a mobile-only category, Gardens on the Go. Visit www.igpoty.com

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Customisation secrets

Fujifilm



Assigning frequently used settings to external buttons, and taking advantage of 'hidden' features in the menu system, can dramatically improve your shooting experience, says **Matt Golowczynski**



Matt Golowczynski

Matt Golowczynski is a London-based journalist and photographer. A former technical editor for *What Digital Camera*, he has contributed to a range of magazines over the past 10 years and graduated from the University of Westminster with a BSc in Photography and Digital Imaging. Visit www.mattgolowczynski.com.

Many people have adopted Fujifilm's X-series models as their primary cameras. It might be the retro aesthetics or the high-quality sensors that attract them, but for many it's the more manual approach to operation that appeals.

It's reasonable, therefore, to assume that the average X-series user customises their camera so that it operates in a way that better fits their shooting. The most obvious way to do this is to programme function buttons to perform specific tasks of the user's choosing, but there are many other options.

This article takes a closer look at some of these options, using the menus and control set-up of the X-Pro2 and X-T2 as a basis for the adjustments.

SILENCE THE CAMERA

IF YOU need to shoot discreetly, such as in a place of worship or at an event with some kind of public speaking, there are a number of things you can adjust to ensure the camera attracts as little attention as possible.

First, you can switch the camera from its mechanical shutter to its electronic one using the Shutter Type option in the Shooting menu. The shutter will still make a sound here, so you

then need to head to the Shutter Volume option in the Sound Setting menu to disable it.

If you want this to remain audible, you can also change its tone with the Shutter Sound option. In this same menu you can turn off the AF Beep Volume, Operation Volume and potentially the Self Timer Volume if you make use of this setting. Another thing to check is that your AF Illuminator is switched off.

'If you need to shoot discreetly you can disable the sound of the shutter, and switch off the AF Illuminator'

CUSTOMISING THE STANDARD DISPLAY

A FEATURE that's not typically offered on the average camera is customising the standard display. This lets you choose which settings are shown in the viewfinder and on the LCD screen by default. It's possible to have quite a range of information here, but if you don't tend to change certain settings you can remove

them so that you can see the scene without obstructions. Many people, for instance, do not change Image Size, Quality or Metering, so they can choose to disable these, and others, if you wish. The option to change this is marked Disp Custom Setting, which is in the Screen Settings section of the Setup menu.

Photographing a place of worship often requires discreet camera operation



ALL PICTURES © MATT GOLOWCZYNSKI

If you regularly shoot macro images, you might like to create a custom Q menu

CREATE MULTIPLE Q MENUS

THE Q menu provides a home for 15 commonly used settings, although many options in the default menu, such as shadow tone and sharpness, aren't perhaps changed so frequently as to warrant a place here.

You can change these by holding down the Q button, scrolling to the relevant option and pressing Menu/OK, before selecting an alternative function. If you find 15 options to be surplus to your requirements, you can set some of these to access no function or even repeat commonly used functions so that you can reach them much faster.

What's perhaps less obvious is that you can create up to seven individual Q menus and alternate between them easily. Seven separate menus may seem excessive, but if you tend to shoot in a handful of specific genres it can speed up option selection.

If, for example, you regularly shoot tripod-based macro images, you can create a custom menu with just Colour, White Balance, Film Simulation, Sharpness, Self Timer and MF Assist options. You may also find it helpful to create a menu specifically for movie recording.

CREATING YOUR OWN CONTINUOUS AF MODE



You can create your own continuous-focus setting

FUJIFILM has made significant improvements to its continuous-focusing system in recent cameras, and this has been accompanied by more control over how this system responds. A further benefit of this is that you can now create your own continuous-focus setting.

This option, which follows the five presets provided as standard, lets you decide three things. The first is Tracking Sensitivity, which gives you control over how the system adheres to a single subject when tracking, and the extent to which it moves to another.

The second, named Speed Tracking Sensitivity, lets you determine the way in which a subject's velocity is taken into consideration when tracking. So, you may want to adjust this one way for subjects moving at a constant speed and the other for those moving more variably. The third, Zone Area Switching, allows you to prioritise a specific area of the focusing system when using the Zone AF mode.

Of course, it's quite possible that one of the presets is perfectly suitable for the subjects you regularly shoot, but this option gives you finer control when you feel it's needed. These options can be found within the AF/MF Settings menu.

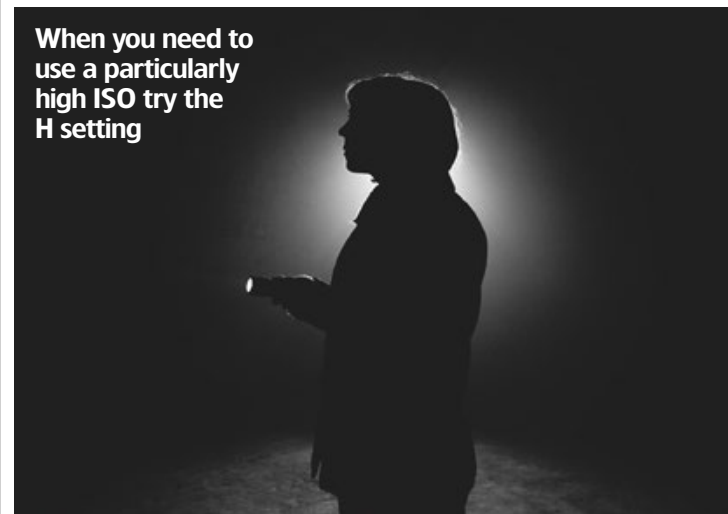
ISO DIAL SETTING (H)

The H setting(s) found at the upper end of a camera's sensitivity range can be customised to access a specific sensitivity within the extended range. On early models, such as the X-T1, Fujifilm provided H1 and H2 settings, which accessed two options in this range (equivalent to ISO 12,800 and 25,600 respectively). However, these can be customised to access another combination of options instead, such as ISO 25,600 and ISO 51,200 equivalents.

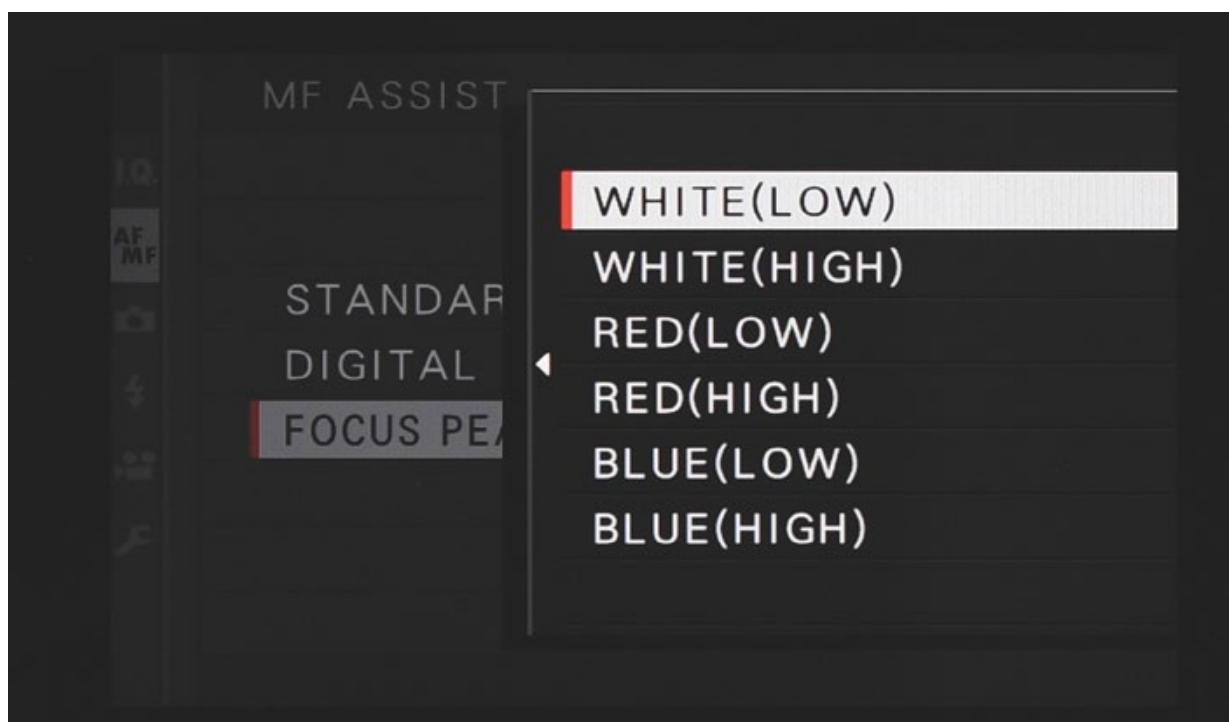
On newer models, such as the X-T2, there is only one option, which is labelled H. As there are two selectable options within the extended-sensitivity range, you can choose whether this accesses the lowest option or the highest. You may wish to use the former to keep noise at a minimum, and potentially when using wide-aperture lenses, or the latter if you find yourself shooting in particularly dark conditions where you absolutely need the highest sensitivity.



When you need to use a particularly high ISO try the H setting



CUSTOMISE FOCUS PEAKING



You can alter the colour of the highlight, and also the focus peaking level

FUJIFILM'S most recent cameras allow a great deal of control over the focus-peaking option, and you may want to customise this so that it works better with the subject or scene being photographed.

Control is offered in two ways: the colour of the highlight and the peaking level. If you've ever tried to shoot a subject that's the same colour as the peaking highlight, you will appreciate why you may want to change the first of these options, although the manual does not provide much information on why you may want to adjust the level, or exactly what this is.

The peaking level lets you determine the point at which the camera identifies contrast. Setting the option to Low brings the threshold down so that a

broader range of contrasting areas is highlighted than with the High option. The Low option is suited to scenes low in contrast, where you will benefit from having more highlighted areas to guide you.

Being more selective, the High option is better when you want a very specific part of the subject or scene in focus, perhaps when using a wide aperture or when you're at an acute angle to the subject. The sharpness of your lens is also a factor; using the Low setting with a super sharp lens, for example, may provide you with too many highlighted areas to be useful.

The above can be adjusted through the Focus Peaking option within the MF Assist settings, which is located in the AF/MF Settings menu.

COMBINE AF LOCK AND AE LOCK

IF YOU'VE ever tried to customise the dedicated function buttons on your camera, you may be aware that many further controls can also have their functions changed, as can the AF-L (Autofocus Lock) and AE-L (Auto-exposure lock) controls.

In many instances, it's perfectly appropriate to have the camera lock focus and exposure simultaneously, which explains why on some cameras these are

combined in a single control. Therefore you may find it useful to programme one of these buttons to combine the two functions, which will free up the other button. This unassigned button is very close to your thumb, which makes it a great candidate for something you may want to access while your eye is to the viewfinder (focus area, AF mode and so on). You can find this option within the Button/Dial menu.

By freeing up a button close to your thumb you can put it to better use



Next time - Sony

In the next instalment of our customisation series (11 March) Matt Golowczynski looks at the useful features you might want to enable or adjust on a Sony mirrorless model – from changing the names of folders to battery-saving tips.



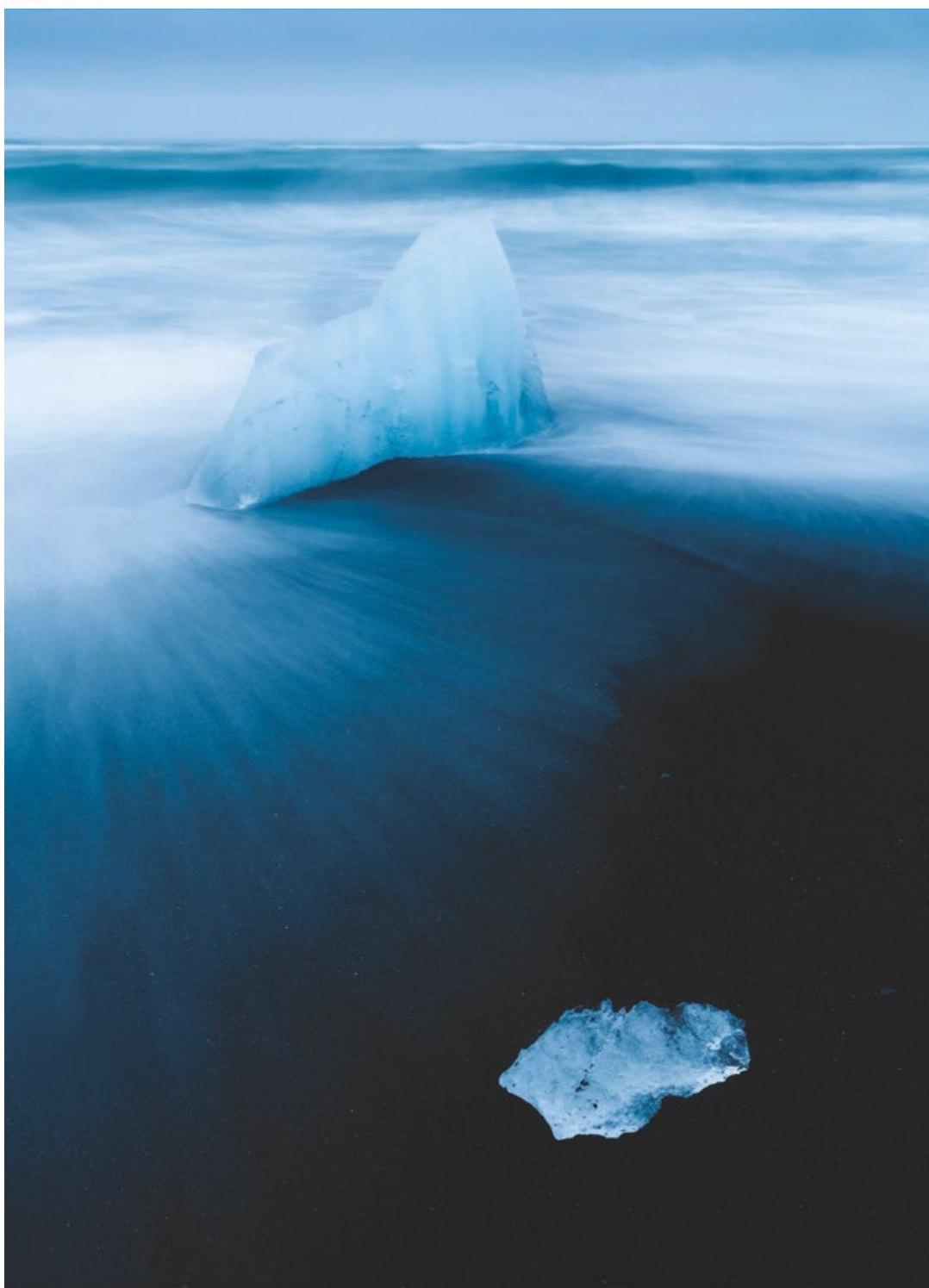
Changing the Movie File Destination lets you dictate where movie clips will be saved

MOVIE FILE DESTINATION

THE Card Slot Setting option, which is found in the Save Data Setting option in the Setup menu, lets you determine whether the secondary card acts as an overflow for the first, or as a mirror so that it backs everything up from your main card. You can also set it to store JPEGs while the other stores raw files. This may make it appear as if movies have to be recorded onto the same card as the other files, although this is not the case.

The Movie File Destination option further down this menu lets you determine where movies are sent, and knowing how to adjust this has two benefits. Not only does it allow you to keep all your videos conveniently in one place, but it also means that you can make sure these are recorded to a card whose performance makes it suitable for video. So, for example, you can use a conventional card in one slot for general shooting and one with a UHS Speed Class 3 (U3) rating in the other.

Ice on the black sand beach at Jökulsárlón.raw

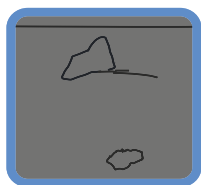


ON THE ICE BEACH IT'S A DARK, SOMBRE WINTER'S DAY.

The grey cloud is low, and the rain is steady, but the muted light is just perfect for the subject matter all around me, namely waves lapping around the artfully sculpted blocks of ice on the black sand.

Now I've seen many images of this unique combination before – it's an Icelandic photographic staple – but there's no resisting the appeal of such stark, elemental beauty. In fact it's a beauty that is enhanced by the flat lighting, a cold scene of black and blue with simple graphic appeal. But as so often is the case here in Iceland the conditions are difficult: apart from the rain, salty spray is being driven inshore off the waves and onto my increasingly crusty camera, lens and filter. So be it, such adversity is now familiar.

I want to express enough movement in the breaking waves to create graphic icy streaks against the black sand, but not so much it just becomes a milky mess. The Little Stopper filter enables me to use shutter speeds measured in seconds, which experimentation suggests is about right. Such rational analysis is of course all well and good, but every wave ensures every frame is different. I'm engrossed, revelling in the joy of photography, and hopeful perceptive art is being created. If so it's Mother Nature's work.



LEE Little Stopper



LEE Filter Holder



Canon 5D mkIII,
24-70mm lens @ 44mm,
4 secs @ f16, ISO 100

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Living colour

Renowned American street photographer **Joel Meyerowitz** talks to **Hollie Latham Hucker** about his journey with photography and Leica, an adventure that has spanned more than half a century

For many of us, Joel Meyerowitz requires little introduction. He's been making photographs for more than 50 years, thanks to a chance meeting with Robert Frank in 1962. Although best known for his street photography, Meyerowitz has had an epic journey over the past five decades as he's evolved as a photographer and pushed boundaries with his work – from the early days of chaotic street scenes to large,

meditative formats, and more recently to still-life studies. As one of the great pioneers of colour photography in the sixties, Meyerowitz was instrumental in challenging people's perception of colour as a serious art form.

It's Meyerowitz's influence on and contribution to colour and street photography that has gained him entry into Leica's Hall of Fame. This prestigious award recognises exceptional photographers for their work and contribution to the photographic

genre. AP was invited to a grand event at Leica's headquarters in Wetzlar, Germany, to celebrate Meyerowitz's work and the latest rangefinder release, the highly anticipated M10. On graciously accepting his award, Meyerowitz was presented with his very own M10, complete with his name engraved on its body. We had the privilege of spending some time with Meyerowitz to discuss his astonishing body of work and, of course, his journey with Leica.

Dairyland,
Provincetown,
Cape Cod, 1976





Woman in hat on street corner, New York City, 1974



Los Angeles Airport, California, 1976

➤ Meyerowitz was born in 1938 in the Bronx, New York City, as America was emerging from the darkest days of the Great Depression. After studying painting and art history, the young Joel landed a job as a junior art director for a small advertising firm in downtown Manhattan in the early sixties. It was during a shoot with Robert Frank (whom Meyerowitz hadn't heard of at the time) that he was exposed to the exhilarating world of photography. He explains, 'It was so astonishing to see Robert moving and taking photographs at the same time. When I left the shoot and hit the streets, everything seemed to be a photograph.' Upon his return to the office, Meyerowitz quit his job. 'It was terrific but I needed to be a photographer... to be on the street, where life is.'

Meyerowitz immersed himself in the streets of New York with a loaned Pentax and it wasn't long before he discovered the tool that

was to set him off on his lifelong journey with Leica. 'I came to the Leica because I met another guy on the streets of New York, the photographer Garry Winogrand – he used one and let me take some photographs with his,' he says. It ignited a spark in him. 'The camera was so free; I could see the world and feel myself at the same moment. So as soon as I earned enough, I bought my first Leica – the M2.'

The rangefinder route

Due to the fast-paced environment Meyerowitz worked in, he had to become quickly accustomed to working a 35mm rangefinder. 'The Leica wasn't a normal focus camera; you had to do manual for everything,' he explains. 'When you apply yourself and you really know your equipment, you're free to make incredible observations.'

What is so intriguing about Meyerowitz's work throughout the sixties and seventies is that his style



continuously evolved as he explored new territories and experimented with different camera systems. 'I got to a point in my life in the early seventies where I thought if I continue to play this game of catch, of being a visual athlete, I would stay at the same plane for the rest of my life and I didn't want to do that,' he admits. On his quest to reinvent himself, Meyerowitz made the decision to use a Deardorff 8x10in view camera in conjunction with his Leica as he became more drawn to using colour film.

'I still made street photos, but I opened up another avenue of experience for myself,' he says. During the summer of 1976, Meyerowitz visited the seaside resort of Cape Cod to get away from the city. 'I found myself taking pictures of light and space, and rendering these things with a large-format camera,' he recalls. It was these beautiful scenes that formed Meyerowitz's first book,



Cape Light, in 1979. Today, it is widely regarded as a classic collection of colour photographs.

On the streets

In those early days, Meyerowitz spent a lot of time exploring the streets of New York with his friend, British documentary photographer Tony Ray-Jones. 'He and I spent the first two years shooting on the streets together, learning the tactics of how to behave, how to see the moment and how close we could get, how far away and how to shape the lens,' he says. This time spent together was hugely instrumental in shaping their early careers. 'It's wonderful to have a partner because then you're both egging each other on and pushing each other.'

On one of many occasions they spent together on the streets of New York, Meyerowitz and Ray-Jones witnessed Henri Cartier-Bresson at work. Meyerowitz remembers it fondly. 'Tony pushed me to go and

New York City, 1975

talk to him. So I did. I introduced myself and at first he said, "No I'm not, are you two police officers?" I said, "No we're photographers," and he said to meet us later on and he'd take us for coffee.' This chance meeting with the legendary pioneer of street photography had a huge impact on Meyerowitz and the way in which he interacted with the streets of New York. As he says, 'It takes time to become invisible. I learned the desire for this through watching Henri Cartier-Bresson on that day in New York in 1963. He was like a ballet dancer. He twisted and he turned and he moved and he was so elegant, and I thought, "Oh, that's how you do it," and I started to feel the dancer in me as part of the package of being on the street.'

Moving to colour

As an early pioneer of colour, it's surprising to hear that Meyerowitz's choice of using Kodachrome slide film wasn't initially an intentional

decision. 'It never occurred to me to use black & white as the world is in colour,' admits Meyerowitz. 'In 1962, when I started with colour, I didn't understand that it was an argument,' he says. 'It's just what I used. But then, when I saw the resistance to colour and the fact that everyone was using black & white and calling it the only art form of photography, I felt this need to verbalise. I felt the need to talk about it – to be a kind of missionary about colour photography.' After all, Meyerowitz wasn't traditionally trained as a photographer. He didn't have a darkroom or know how to print at this point. People associated colour photos with holiday snaps and there were plenty of labs in New York that could develop colour slides in a couple of hours.

In the mid-sixties, Meyerowitz started carrying two Leica cameras, one loaded with Kodachrome and one with Tri-X. 'When the moments were possible, I made



pairs, because I was trying to understand colour,' he explains. He describes colour as a very decisive form of photography, 'You need to be precise with it, unlike black & white, which can be very forgiving.' He continues, 'Part of my test during that time was to see if the picture is more successful in black & white and it doesn't need colour to be accepted that way. But I was pushing the argument for colour for other reasons, because if we accept that colour photography describes what is in front of the camera, then description is the resource. I wanted all the description, not just part of the description. And I think that's what tilted the argument towards colour.'

Meyerowitz reflects back on this period with some regret. 'I developed a very big body of work of those pairs and I didn't publish them. In the sixties I showed them to John Szarkowski, the director of photography at New York's Museum of Modern Art, but colour was too difficult for everybody then,' explains Meyerowitz. 'I didn't take the question I was asking and the responses I was making seriously enough to push it,' he admits. However, Meyerowitz will be publishing a book of these pairs soon. 'I have a feeling it will just allow people to look back at that

period and say, "Oh, that was a real question being asked back then by Joel." That's something when I look back now I think, why didn't I take what I was doing seriously enough to push for that.'

New York City

New York is where Meyerowitz feels at home; after all, he's from the Bronx and learnt his craft on the streets. 'I love Paris, London, Tokyo and a lot of other places that I've photographed, but there's something about the craziness of New York... there's a Trump on every block,' he laughs. 'There's a crazy on every block doing something unexpected.'

Reminiscing about the early days on the streets, he is saddened to describe how it once was. The New York he remembers and loves doesn't exist any more. 'There was an innocence of people in that period, in that they didn't think they were worth photographing,' he explains. 'They didn't have their 15 minutes of fame or do selfies and it wasn't "me, me, me" – it was gritty. If you took a picture of someone, they thought it was the building behind them. This allowed for a kind of playfulness, an intimacy on the street. You could get close to people and they didn't see or feel you. It was really special.'

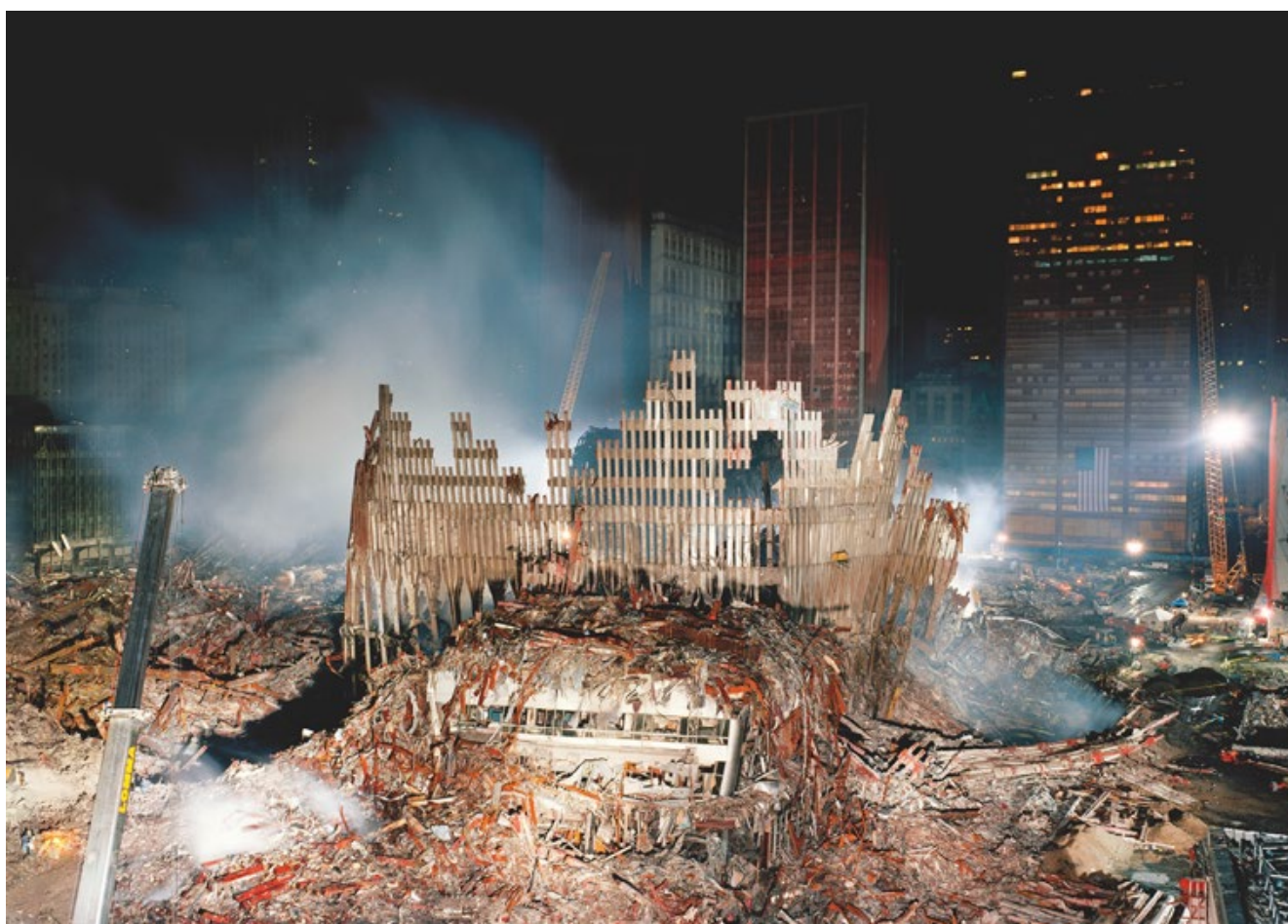
While Joel's early colour work in Cape Cod was a symphony of

Five more found,
Ground Zero,
New York, 2001



From the World
Financial Center,
looking east,
Ground Zero,
New York, 2001

'I fought for our rights as Americans to see what was going on. I stood up against the establishment'



tranquillity and luminosity, his documentation of the aftermath of the collapse of the World Trade Center revealed a much darker body of work that was to be yet another turning point in his career. Signed off as a crime scene, the entire area was closed to all photographers bar one. Through sheer persistence and a couple of contacts, Meyerowitz gained unprecedented access and began working inside Ground Zero. 'A number of detectives ultimately helped me by getting me a pass that made me a member of the NYPD. It had a picture on it and everything, so I was able to stay,' he explains. 'I did it against the resistance of the political class, against Mayor Giuliani and all those people that said "no photography", and I fought for it. I fought for my right and our rights as Americans to see what was going on in there, so I stood up against the establishment and that felt good.'

Over the nine-month clean-up, Meyerowitz built an extraordinary archive of more than 8,000 images that revealed not only the destruction caused by the terrorist attacks but also the recovery efforts.



His work is the only record of the devastation caused at Ground Zero.

The experience affected Meyerowitz personally and had a profound effect on his work. It's clear to see why this is the body of work he's most proud of.

'It was interesting to find my core interests, to subdue my artistic side and to just do it as a photographer making a record, but along the way I had a change of life,' he says. 'I felt I could open myself up to making useful bodies of work that I didn't only have to make work for myself.'

A second chance at life

Ground Zero introduced Meyerowitz to a whole other level of Americans: the working class, the firemen, construction workers and the footsoldiers of everyday life. 'To be with them for nine months like that and to be welcomed in was an incredible experience, and I feel like I made a contribution to something,' he says.

At such a monumental point in Meyerowitz's career, it's easy to forget that he was in his sixties. 'I was doing a young man's work, the kind of stuff I should have been

doing in my twenties. It was hard.' Meyerowitz documented the tireless efforts of police officers, firemen, engineers, construction workers and volunteers with a Leica M6 that was loaned to him by Leica NY and a large-format 5x4in camera.

'Every day it was hard carrying all that crap around and being in that hole,' he admits. 'I had a kind of rejuvenating experience where I felt young again.' He says it was like getting a second chance at life and photography. 'At any time, any older person can experience youth and the essential properties of it through the magic of photography. It's a transformation that is rare and I had that for nine months. I felt like I had just begun. It was worth everything to me.'

After an intense nine months, Meyerowitz began the mammoth task of assembling his archive, and it wasn't long before it led to other opportunities. 'During that time, some other things germinated that were a perfect fit. The mayor then became Michael Bloomberg and his commissioner of parks was someone I knew, who was helpful getting me in to Ground Zero. Together, they



Joel Meyerowitz is an award-winning street photographer from New York. He was one of the early pioneers of colour photography and his career has spanned more than 50 years. He now splits his time between Tuscany and New York City, and spends most of his time taking humble and delicately lit still lifes. See more of his work at www.joelmeyerowitz.com

asked me to photograph the New York City park system.'

Meyerowitz undertook the massive task of documenting the city's 30,000 acres of parkland across all seasons, choosing only to photograph the wilderness areas. He spent the next couple of years creating what he describes as the bookend to Ground Zero. This project was published as *Legacy: The Preservation of Wilderness in New York City Parks* (Aperture, 2009).

'There was New York destroyed and now New York eternal, being preserved,' he explains. 'I was able to make a New York that had fallen and a New York that continued.' He reflects on these bodies of work as a pair. 'I see them as a unit, together with the rest of the work I made on the street,' he explains.

As his birthplace, home for many years and the city where he discovered his passion for life and photography, New York City is held dear in Meyerowitz's heart. He finishes by saying how proud he is. 'I feel like I have developed something about New York in both the late-20th and early-21st century that is my work.'

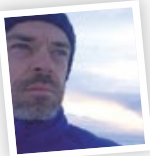
Reader Portfolio

Spotlight on readers' excellent images and how they captured them

1



Chris Davis, Woking



Chris has worked for nearly 20 years in the advertising industry as a CGI artist. As part of his work he bought himself a Canon DSLR. He admits it was only brought out of the cupboard for special occasions. It wasn't until 2012 and a family holiday that he began to discover the real potential of photography. From then on he was hooked. He's a huge fan of the outdoors, particularly mountains, and this year hopes to increase his knowledge and technical ability while taking images. www.chrisdavis-photography.com

Fire & Ice

1 Chris has captured the warm sun through the ice filtering off to cool tones in the foreground. The spread of ocean is a real bonus
Canon EOS 5D Mark III, 17-40mm, 1/2sec at f/16, ISO 100

Golden Storr

2 This shot lasted just 20 seconds, so Chris had to be prepared. It features a lovely contrast of forms and tones throughout
Canon EOS 5D Mark III, 17-40mm, 1/20sec at f/13, ISO 100

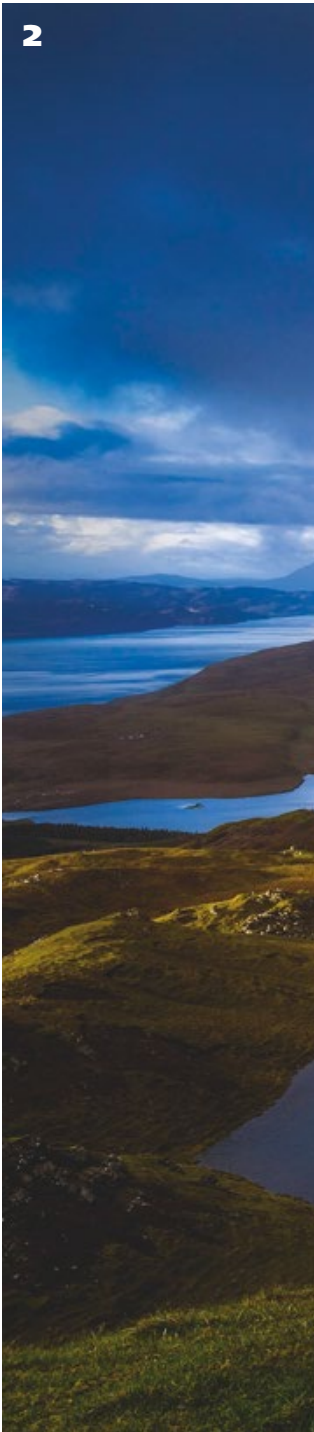
Tides of Change

3 This image was taken at Sligachan on the Isle of Skye. The clouds here were moving fast but Chris risked a slow shutter speed. The clouds have remained relatively sharp but we also see lovely strokes of movement in the water
Canon EOS 5D Mark III, 17-40mm, 1sec at f/22, ISO 100, tripod, Hitech filters

3



2



4





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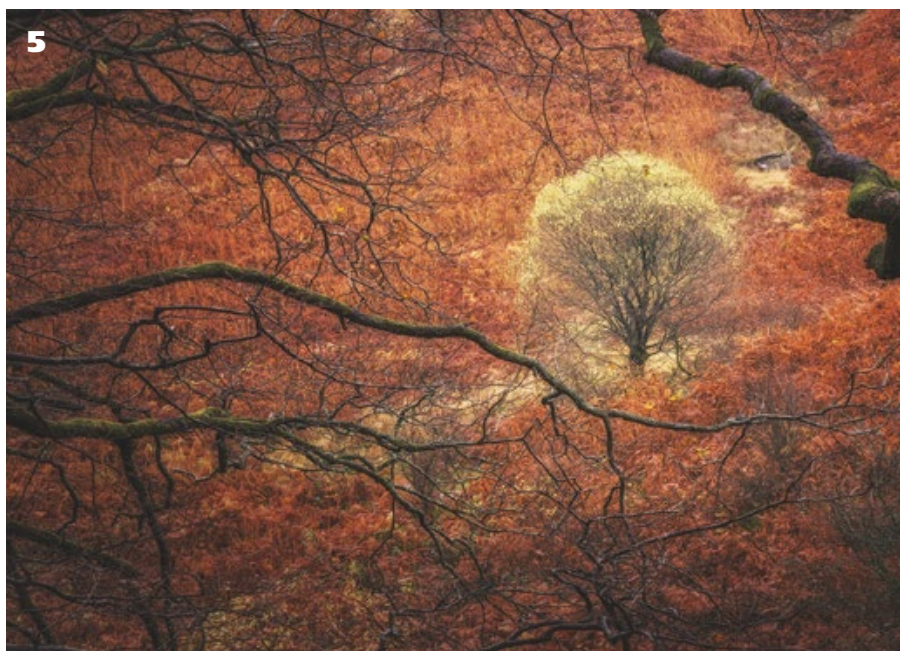


Langdale Valley

4 This was an image Chris knew would lend itself perfectly to a monochrome conversion. This has emphasised the fleecy clouds and the light dappling the sweeping landscape of mountains and foliage
Canon EOS 5D Mark III, 17-40mm, 1/20sec at f/10, ISO 100, tripod, Hitech filters

Tree Through Tree

5 Chris found this scene in Penny Rock Wood in the Lake District. It really is a gorgeous shot with the pale leaves of the subject contrasting with the fiery red of the foreground
Canon EOS 5D Mark III, 24-105mm, 1/10sec at f/10, ISO 100, tripod, Hitech filters



WILDLIFE WATCH

Cormorants

Widespread, conspicuous and tolerant of humans, cormorants make great winter subjects, says **Oscar Dewhurst**

CORMORANTS are widespread, large, and often show surprising tolerance to humans, making them good photographic subjects. At this time of the year, adult birds show white feathering on their heads, making them particularly photogenic.

Habitat

During the winter, cormorants can be found inland at large bodies of water including lakes, reservoirs and wetlands, perched conspicuously on branches or other objects with their wings outstretched to dry them. They feed exclusively on fish, which they catch by diving beneath the surface of the water.

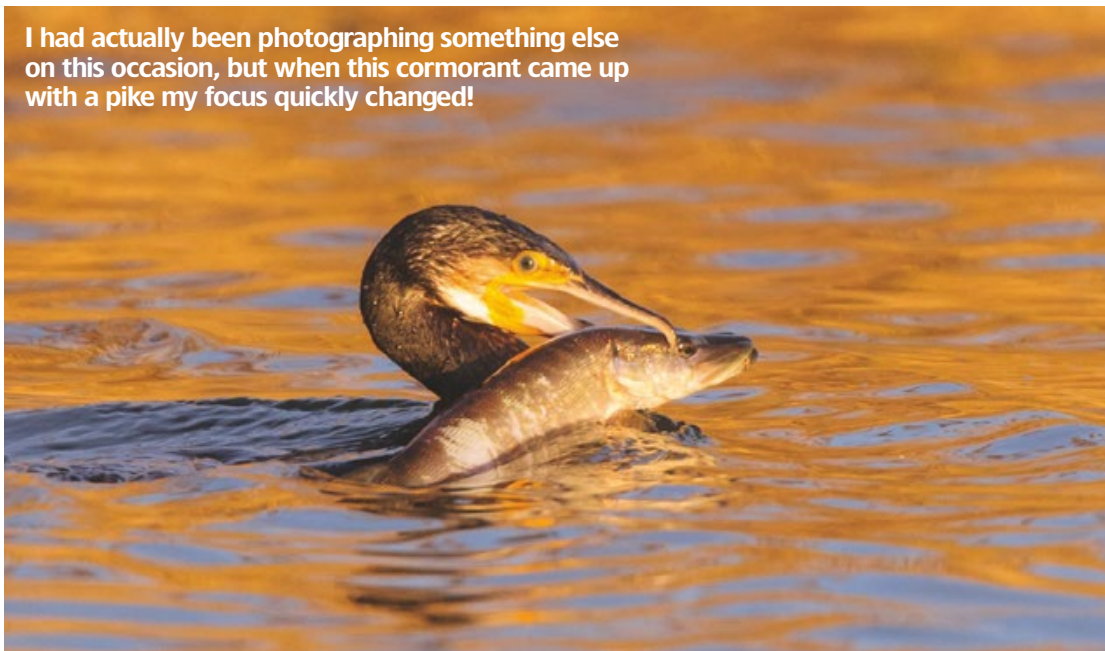
To stand the best chance of photographing these birds it's a good idea to sit and observe them for a while. That way you can work out if they have

any favourite perches, and get to know their preferred fishing locations. Once you've got this information you can stake these areas out.

Best time to shoot

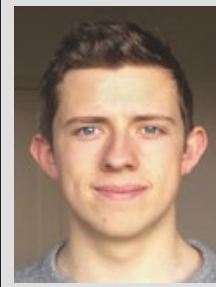
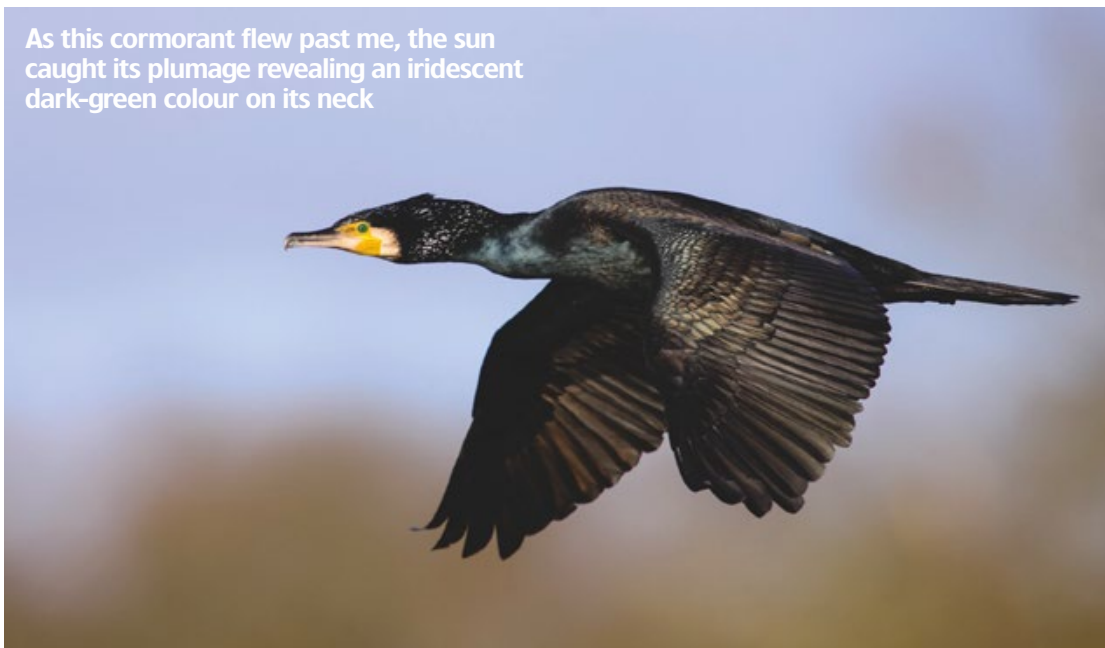
At this time of the year the sun is low in the sky, so you don't have to worry too much about harsh shadows and highlights, and the accompanied loss of detail that can make shooting in the summer months challenging. However, early morning and late afternoon still coincide with periods of the greatest activity for most birds, and the light can have a lovely quality at these times. Shooting at either end of the day provides opportunities to experiment with silhouettes against the water, and backlit images really stand out from the crowd.

I had actually been photographing something else on this occasion, but when this cormorant came up with a pike my focus quickly changed!



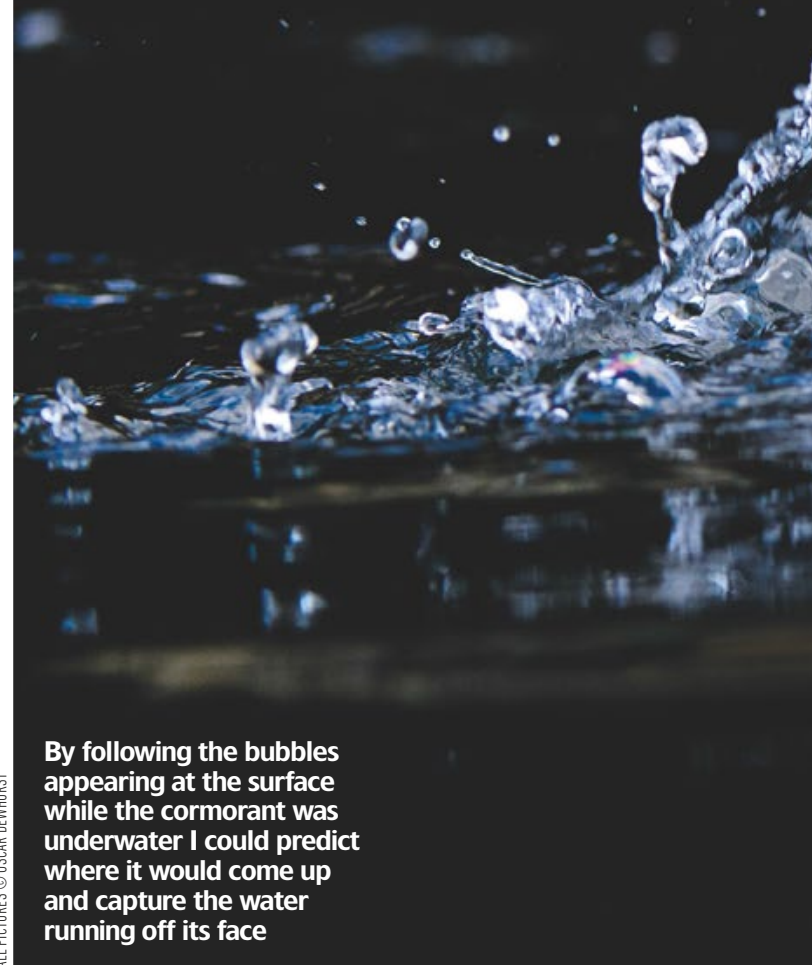
ALL PICTURES © OSCAR DEWHURST

As this cormorant flew past me, the sun caught its plumage revealing an iridescent dark-green colour on its neck



Oscar Dewhurst

Oscar Dewhurst is an award-winning wildlife photographer from London currently studying at Durham University. Most of his pictures are taken around his home city, but he has also spent time in other locations including the Peruvian rainforest. www.oscardewhurst.com



By following the bubbles appearing at the surface while the cormorant was underwater I could predict where it would come up and capture the water running off its face

KIT LIST

► Telephoto lens

A lens of at least 300mm is normally required to photograph cormorants as, like most wildlife, they do not come as close as you might like. A long lens also blurs out the background, emphasising the subject.



▼ Binoculars

I always keep a pair of binoculars with me when I'm out shooting. They are much brighter than looking through a camera lens, making it easier to spot your subject. They also weigh significantly less.





Cormorants are found across most of the UK

Shooting advice

Settings

As with all wildlife, I use continuous autofocus, my fastest frame rate (4 frames per second on my D800) and single spot focus. I use aperture priority or manual mode depending on the situation. If the light is consistent, manual mode is a good option, but if the sun is going in and out behind the clouds aperture priority gives me one less thing to worry about. It's also important that the camera's metering is not confused by the dark colour of the bird's plumage.

Finding them

Diving birds make excellent photographic subjects, because you can often approach them while they are still underwater, which allows you to get quite close. Just

make sure that you keep still and try to be as inconspicuous as possible when they surface. Once you are near enough to photograph them, get as low to the ground as you can – this often results in a diffuse foreground and background allowing the bird to stand out in the frame.

Approach

The range of images you can take is extremely diverse – you can capture cormorants drying their wings, swimming, or flying, but it's the shots of them fishing that I love the most. By watching them feed you can capture them with their prey in their mouths, as well as moments when they surface from dives, with water running off their face.

About cormorants

Cormorants are present across most of the UK during winter, and make ideal subjects for photography with their iridescent and glossy black plumage. They provide plenty of opportunities for a wide variety of images, including the much-desired shots of them with fish in their beaks.

- **Location** In winter cormorants can be found across most of the UK; breeding birds are mostly found close to the coast, although increasingly they also breed inland.
- **Size** 70-102cm; wingspan 121-160cm.
- **Nests** Made of seaweed or twigs, built in trees or on cliffs.
- **Diet** A wide variety of fish.
- **Population** 9,000 breeding pairs, 41,000 wintering individuals.

Accessories

Useful gadgets to enhance your photography, from phones to filters...

Metz mecablitz M400

£239 • www.intro2020.co.uk

Andy Westlake tests a small, fully featured flash

At a glance

- Bounce-and-swivel head
- 24-105mm equivalent zoom coverage
- Uses 4 AA batteries

SMALL yet fully featured mirrorless cameras have become increasingly common recently, and the mecablitz M400 is German flash maker Metz's first unit specifically designed to complement them. It's just 9cm tall, but still packs a decent punch with a guide number of 40m at ISO 100.

Indeed the M400 is remarkably similar in size and design to the Nissin i40, with the flash tube attached to the main body via an articulated metal armature. This allows the head to be tilted upwards 90° and rotated through fully 360°, so the light can be bounced for a more flattering effect. A small white card can be pulled out to direct a catchlight into your subject's eyes.

Delving deeper into the specs, however, reveals the M400 to be a more sophisticated unit than the Nissin, which for some users will justify its higher price. It offers a finer degree of control over its light output, and supports high-speed sync (FP mode). For camera systems that include off-camera wireless flash, it supports both master and slave modes.

Verdict

I tested the Micro Four Thirds version of the M400 and found it worked well. Its controls take a little getting used to, with five buttons on the back used to change settings on a tiny OLED display, but crucially it gave good exposures and the light output is even. Unfortunately, weak click stops on the bounce adjustment means it doesn't work well with light modifiers that require the head to be set vertically as it collapses under their weight. Aside from this, it's a good match to small mirrorless cameras.

Wideangle diffuser

Pulls out and folds down in front of the flash to give ultra-wideangle coverage (to 12mm equivalent).

Hotshoe lock

A rotating collar around the unit's foot holds it firmly in place on the compact camera.

LED video light

Adjustable in six steps, with a maximum output of 100 lux at 1m.

Micro-USB socket

Allows the firmware to be updated for compatibility with future cameras.

CAMERA COMPATIBILITY

The M400 is available in versions to fit most major camera brands: Canon, Fujifilm, Nikon, Olympus/Panasonic, Pentax and Sony. The exact feature set you will get depends on the version, particularly with regard to off-camera wireless flash control. To check exactly which features will work with your camera, check Metz's website.

Amateur Photographer
Testbench
Recommended
★★★★★



Leef iBridge 3 32GB

£59.99 • www.leefco.com



Amateur
Photographer
Testbench
GOLD
★★★★★

IF YOU have started shooting 4K video, or raw images with an iPhone, you may well have started running out of space on your device. The Leef iBridge 3 can offer additional storage, without having to spend a premium on a higher capacity phone. We tested the 32GB version, but a smaller 16GB, and larger 64GB and 128GB versions are also available, ranging in price from £44.99 to £129.99. Effectively the iBridge 3 is a memory stick with a 180° curve. On one end of the device is a Lightning connection that plugs in to your iPhone or iPad, and at the other is a USB 3.0 socket.

Once connected a prompt is displayed to download the Leef iBridge 3 app. When installed the app allows files to be transferred to and from the iBridge, helping you to offload images and video to save space, or just to back up for extra security. The USB 3.0 connection, that gives the device its name, then allows for the data on the iBridge 3 to be transferred to a computer faster than the previous iBridge, which only had a USB 2.0 speed. The device can also be used in reverse, transferring images, video, music or other files, from your computer to your iPhone or iPad.

I found that the Leef iBridge 3 and the associated app are simple to set up and use. The additional rubber case, with keyring loop, means the Leef iBridge 3 can be with you at all times, allowing essential files or images to always be on your person, without taking up valuable space. Better still, it can be password protected, so even if you lose the iBridge 3 your data can't be accessed. It's a great device for photographers for whom an iPhone or iPad is part of their regular working practice.

Richard Sibley

The Leef iBridge 3 comes with a rubber case and keyring loop



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At a glance

£599.99

- 20-million-pixel, 1in sensor
- 24-72mm equivalent f/1.4-2.8 lens
- Tilting 3in touchscreen
- 4K video recording

Panasonic Lumix DMC-LX15

Andy Westlake tries out **Panasonic's** fast, enthusiast-friendly power compact with 4K video

For and against

- Compact size makes it easy to carry in a jacket pocket
- Lots of external controls for quick settings changes
- Excellent on-screen user interface
- Reliably good image quality
- Smooth, slippery surface and small thumb rest give an insecure grip
- Default control set-up makes poor use of dials
- No electronic viewfinder
- No flash hotshoe or wireless external flash control

Data file

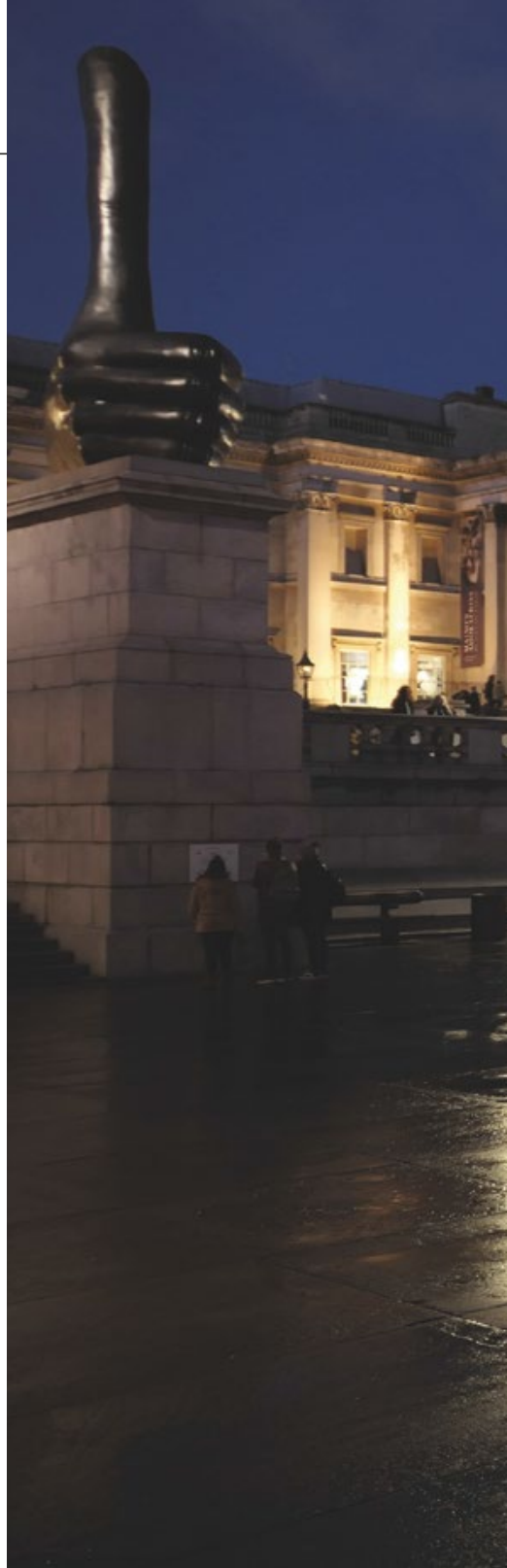
Sensor	20.1MP, 1in MOS
Output size	5472x3648 pixels
Lens	24-72mm equiv. f/1.4-2.8
Focal length magnification	2.7x
Shutter speeds	60-1/4000sec, 1-1/16,000sec electronic
Exposure modes	PASM, iAuto, scene
Metering modes	Multi, centreweighted, spot
Sensitivity	ISO 125-12,800 standard, ISO 80-25,600 extended
Exposure compensation	±5EV in 1/3 steps
Continuous shooting	10fps; 6fps with AF tracking
LCD	3in, 1.04-million-dot tilting touchscreen
Viewfinder	None
AF points	49
Video	4K (3840 x 2160), 30 fps
External Mic	No
Memory Card	SD, SDHX, SDXC
Power	DMW-BLH7E Li-ion
Battery life	260 shots
Dimensions	105.5x60x42mm
Weight	310g with battery and card

Panasonic has a long history of making fully featured pocket compact cameras for enthusiast photographers. Indeed, back in 2008 its Lumix LX3 single-handedly revived the category after it appeared to have been made extinct by the rise of truly affordable DSLRs. However, its last truly pocketable contender, the LX7, was made obsolete by Sony's release of the Cyber-shot DSC-RX100 with its much larger 1in sensor. Now, though, with the Lumix DMC-LX15, Panasonic has finally struck back with a direct alternative to the RX100 series.

It's important to note that the new model is not a direct replacement for the two-year-old LX100, Panasonic's current offering in this general category and still one of our favourite zoom compact cameras. The LX100 includes an electronic viewfinder, a comprehensive set of analogue controls and a larger Four Thirds

sensor, but this all means that it's relatively bulky. In contrast, the LX15 employs a 1in sensor in a much more pocketable body.

Taking on the popular RX100 series head-on is a daunting task, especially with Sony offering five generations at a wide range of price points (the £530 RX100 III is currently closest to the LX15). So with this new model, Panasonic appears to be targeting Sony's biggest weakness, namely the RX100's manifestly sub-standard control layout. To this end, the LX15 manages to accommodate no fewer than three control dials, with a dedicated aperture ring around the lens joined by a smoothly rotating ring on front of it, and a clicking dial on the top-plate. The message seems to be that this is a serious camera for real photographers, rather like Canon's PowerShot G7 X Mark II, which is another strong contender in this class. So let's see whether it lives up to that billing.





The fast lens and effective image stabilisation allowed me to shoot handheld at twilight using low ISOs 1/8sec at f/1.4, ISO 125

Features

Like most current compact cameras designed for enthusiasts, the LX15 is based around a back-illuminated, 20-million-pixel, 1in sensor. It seems safe to assume that this is the same unit as that used in similar cameras such as the G7 X II and the older-generation Sony RX100 III. Panasonic provides a standard sensitivity range of ISO 125–12,800, which can be extended to ISO 80–25,600, but with the usual risks of excessive noise at the highest setting and an increased risk of highlight clipping at the low ones. Burst-mode shooting runs at up to 10 frames per second with focus fixed, or 6fps with AF tracking and live view between frames, with a useful 11-frame buffer when shooting raw. This should be more than adequate for a pocket camera, although Sony's latest RX100 V shoots much quicker at 24fps.

In front of the sensor is a 3x

zoom lens with 24–72mm equivalent angle of view. This is broadly the same range as that offered by the RX100 III and its later variants, and Panasonic's own LX100, although it's trumped by the 24–100mm equivalent optic Canon provides on the G7 X II. Panasonic, however, would like you to be bewitched by its headline maximum aperture, with a remarkably fast f/1.4 at wideangle, falling to f/2.8 at telephoto. But in practice there's a serious catch: zoom in just a little to the 28mm setting and the aperture plummets by almost 2 stops to f/2.5. So in reality, the LX15 brings little real-world advantage over the RX100 III, and over most of the zoom range the G7 X II's lens is fractionally faster.

Panasonic is also proud of the close-up ability of the lens: it can focus on a subject just 1cm from its front, when set to the wideangle setting. However, zoom to telephoto and the minimum focus

distance increases to a more prosaic 30cm. At this point it's noticeably less capable than the kit zooms sold with most DSLRs and CSCs.

Viewing uses a 3in, 1.04-million-dot screen that can tilt upwards for waist-level shooting. It's touch-sensitive and can be used both for browsing images in playback and to change most of the camera's settings while shooting. Panasonic's excellent interface means that it complements the camera's physical controls really well.

Autofocus employs Panasonic's tried-and-tested Depth from Defocus technology, which uses knowledge of the lens's optical characteristics to achieve focus based on measurements from a pair of out-of-focus images. The shutter-speed range covers 60–1/4000sec in mechanical mode, and 1–1/16000sec using the silent electronic shutter, which means you can happily shoot at

maximum aperture in bright light. This is handy, as the lens doesn't have the built-in ND filter found on many of its competitors.

Typically for Panasonic, the LX15 is jam-packed full of additional features. There's an auto-stitching panorama mode, time-lapse shooting and stop-motion animation, highlight and shadow tone curve adjustments, a whole array of image-processing filters such as toy camera and retro that Panasonic calls Creative Controls (including the very attractive dynamic monochrome mode), and for JPEG shooters multi-exposure handheld night shot and high-dynamic range modes. Raw-format users will appreciate the presence of Panasonic's well-designed in-camera converter. You'll also find built-in Wi-Fi for connection to a smartphone or tablet, that allows both image sharing and remote control with live view and full manual control.





High levels of detail can be achieved right across the frame by stopping the lens down a little 1/250sec at f/4, ISO 125

▶ 4K Video & 4K Photo

Like other recent Panasonic cameras, the LX15 can record 4K video, at 3840x2160-pixel resolution and 30fps and up to 100Mbps. Alternatively, it can record full HD (1920x1080 pixels) at up to 60fps. Full manual control is available, and it's also possible to zoom the lens during recording and pull focus from one subject to another by tapping on the touchscreen. However, the lack of a built-in ND filter hampers the use of large apertures for video in bright light.

Of course, many photographers have little interest in video, but

they might still appreciate the LX15's 4K Photo mode. This in effect allows 8-million-pixel stills to be shot at 30fps, and recorded as a video file to save space. Panasonic then makes it easy to scroll through individual frames and extract your favourites as conventional JPEG stills. This can help with capturing peak moments in fluid shooting situations.

Some may also be intrigued by Panasonic's 4K Post Focus technology. When this is enabled, the camera takes a series of pictures at different focus distances, such that every segment of the image that falls

under an AF area is in focus on one of them. The idea is that you can refocus the image in playback, and even produce a composite image with extended depth of field beyond what would be possible by purely optical means. This is a great party trick and can be fun to play with, but I don't really find it a useful photographic tool.

Build and handling

With its aluminium body and precisely milled metal dials, the LX15 looks and feels like a quality piece of kit, and bears a strong family resemblance to other recent Lumix compacts such as the TZ100 travel zoom. However, its smooth finish and minimal finger-grip make it decidedly insecure in your hand, and a wrist or neck strap is an absolute must. The camera's cluttered back also means that there's very little clear space on which your thumb can rest, and I found it far too easy to press the 4K Photo and 4K Post Focus buttons by accident.

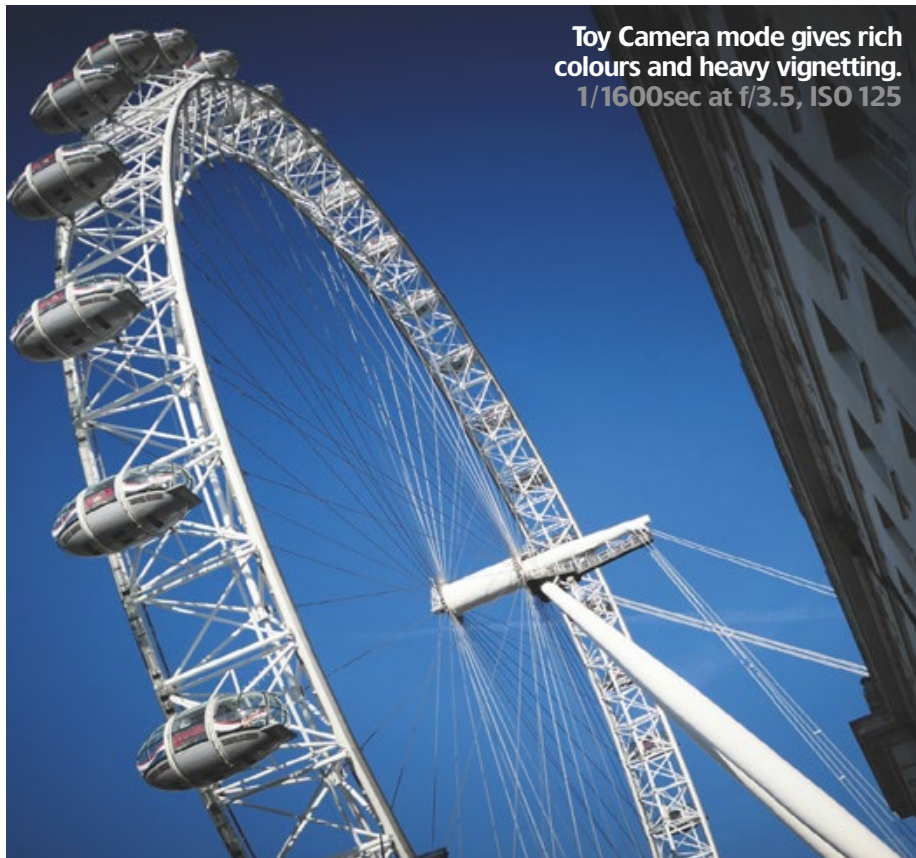
When it comes to control layout, the LX15 is something of a mixed bag. While it has loads of buttons and dials, they're set up in a somewhat eccentric fashion that I can't help but feel doesn't make best use of them. For example, the well-placed top-plate dial sets shutter speed in shutter-priority and manual-exposure modes, and program shift in program mode.

Yet disappointingly it does nothing at all in aperture priority, which I suspect many enthusiasts will prefer to use much of the time, encouraged by the presence of a real aperture ring. Now you might be tempted to reprogram this dial to change exposure compensation, which would make best use of it in aperture priority. But because this reassignment affects all exposure modes, there's then no way to set the shutter speed in S and M modes without resorting to the touchscreen. Ideally, Panasonic would fix this and allow us to optimise the control setup for each mode independently.

Help is at hand, however, from the front lens ring. By default, this is set up to be a manual-focus ring, but if you're using autofocus it reverts to being a zoom controller. This broadly duplicates the function of the zoom lever that's placed around the shutter button, except the lens ring is set to step through familiar 'prime' focal lengths (24mm, 28mm, 35mm, 50mm and rather pointlessly both 70mm and 72mm), while the zoom lever gives continuous and very precise control of the zoom, which is great for fine-tuning composition. So I preferred to re-configure the lens ring to operate exposure compensation, which works in all exposure modes except manual. Otherwise, you

Panasonic's Dynamic Monochrome mode gives lovely high-contrast black & white 1/1000sec at f/2.8, ISO 125





have to press the up key on the D-pad to access this setting, which somewhat negates the point of having all those dials.

Then there's the question of ISO control. Panasonic has chosen to include dedicated buttons for its 4K modes, but inexplicably has left off an ISO button. Some users may be happy to leave the camera set to auto ISO, but I preferred to re-assign the 4K Post Focus button to control ISO. With these tweaks made to the control layout, I found the LX15 became much more pleasant to use.

Even when optimally set up, though, the LX15 has some flaws. The aperture ring is slim and close to the camera body, and you're clearly supposed to operate it by grasping protruding grips on either side with your forefinger and thumb. This works OK when the camera is held in landscape format, but is decidedly awkward when shooting vertically framed compositions. You can instead hold the smooth sides of the aperture ring to turn it, but this will inevitably entail moving the front lens control ring at the same time. Fortunately, Panasonic has realised this, and the camera cleverly ignores any movement of the lens dial that's synchronised with the aperture ring. But overall I'd have preferred an aperture ring with a ridged grip around most of its diameter, and slightly larger in diameter than the front lens ring, as this would be easier to use.

The buttons on the camera's back are also small, closely spaced

and rather recessed, which makes them quite fiddly to use. Indeed, shooting with gloves in cold winter weather, I gave up on trying to use them entirely. To be fair, most other small cameras have similar problems, but Canon has managed to fit much larger buttons on the G7 X Mark II.

LCD screen

Unlike its bigger brother the LX100, the LX15 has no space for an electronic viewfinder. With no hotshoe or accessory port it can't accept an add-on unit, either, but it seems these were never especially popular with photographers anyway. Instead, viewing is solely via the rear screen, which is an excellent 3in, 1.04-million-dot unit that's bright and sharp, with accurate colour. Hinged at the top, it can tilt upwards for use as a waist-level viewfinder, and face forwards over the top of the camera for shooting selfies. It also works for overhead shooting if you're prepared to turn the camera upside down, but like all single-axis tilt screens it's much less useful when you rotate the camera to shoot in portrait format.

As usual for Panasonic, a huge amount of useful shooting information can be overlaid, with on-screen touch buttons to turn on and off gridlines, the dual-axis electronic level display and the live histogram. Indeed, Panasonic's interface is one of the best around, and manages to convey plenty of information without being excessively cluttered.



Focal points

Panasonic has crammed plenty of controls on to the LX15's compact, pocketable body

Battery

The DMW-BLH7E battery is rated for just 260 shots and charges via the camera's USB port

Connectors

Micro USB and HDMI sockets allow connection to a computer or TV

AF illuminator

A blindingly bright orange assist lamp light aids autofocus in dim conditions. Thankfully, the LX15 doesn't often need to use it

Built-in flash

A tiny flash unit pops up from the top of the camera that can be held back and aimed upwards for bounce flash. However, there's no hotshoe or wireless external flash control

Aperture ring

This is marked from f/1.4-f/11, and clicks at one-third stop increments



Top-plate dial

This is the only means of changing the shutter speed in shutter priority or manual-exposure modes, without using the touchscreen. However it can be set to control another function if you normally use aperture priority

Customisation

Both electronic dials and three marked Fn buttons can have their functions re-assigned by the user. Much of the on-screen interface is configurable too

Q menu

Panasonic's handy on-screen quick menu gives access to commonly used functions and can be user-customised





With its fiddly controls the LX15 is difficult to use wearing gloves, so in cold weather I ended up freezing my fingers 1/160sec at f/4, ISO 125

Autofocus

As already mentioned, the LX15 uses Panasonic's Depth from Defocus technology for autofocus. As on the firm's other recent cameras, this is extremely effective and gives fast, accurate and silent focusing. The subject can be placed anywhere in the frame simply by tapping the screen, and the size of the AF target can be adjusted in eight steps. A large range of alternative AF area selection modes is available, such as face and eye detection when shooting portraits.

Switch to manual-focus mode and the front lens ring is used to adjust focus. The comprehensive array of focus-assist tools includes a picture-in-picture magnified view, alongside a focus-peaking display in a choice of five colours and two contrast-detection levels. This all fits together really well, making accurate manual focusing very easy indeed.

Performance

Over recent years we've got used to Panasonic's cameras being exceptionally fast and responsive, and the LX15 doesn't disappoint. Indeed, it's almost as quick as the firm's high-end mirrorless models, and I rarely felt that the camera was holding me up during shooting. It only slows down if you shoot a lot of images in quick succession, or engage one of the more processor-hungry creative control filters.

Left to its own devices, I found the metering tended to give rather bright results, and I often preferred to drop the exposure down by 1/3 or 2/3 of a stop. Fortunately, the camera's live histogram and zebra-pattern warnings make it easy to avoid overexposure and highlight

clipping. Likewise, I preferred to work with preset white balances, such as sunny or cloudy, rather than rely on the auto white balance getting things right.

The lens is on the whole a respectable performer, although the corners are rather weak wide open at both the wideangle and telephoto ends, and if you want to make the very best use of the sensor's resolution you'll need to shoot around f/5.6. However, those larger apertures are available if you need them, and combined with effective image stabilisation they allow low-light shooting without necessarily having to raise the ISO very far at all. The f/2.8 setting at telephoto also enables some degree of subject isolation and background blur, although clearly not as much as you'd get from a fast zoom on a larger sensor (it's more like shooting at f/5.6 on APS-C).

At low ISO sensitivities the sensor delivers excellent detail, but the camera's JPEG processing is perhaps a little over-enthusiastic when it comes to sharpening. Likewise, once you hit ISO settings of 800 or more, the noise reduction begins to look somewhat heavy-handed and destructive of fine detail, although it does a good job of maintaining colour. The camera's JPEG colour palette is biased towards accuracy and gives less punchy colours than most other brands, but of course you can pep things up by boosting the saturation or using the vivid colour mode. With all this considered, however, you'll get the best results if you're prepared to shoot and process raw. If getting the best JPEGs out of the camera is an important consideration, then the Canon G7 X II would probably be a better choice.

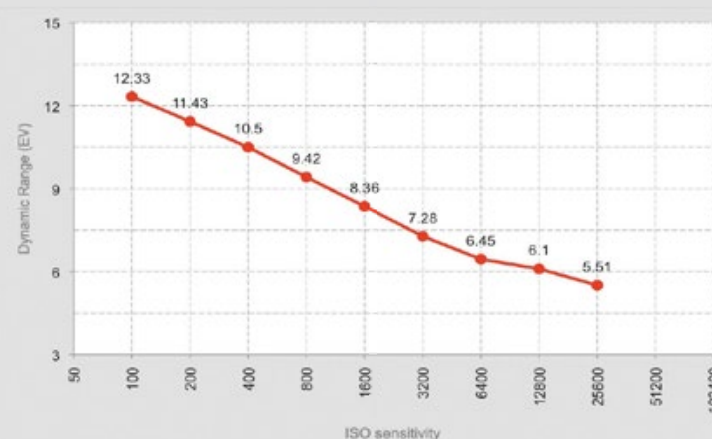


Lab results

Andrew Sydenham's lab tests reveal just how the camera performs

It's fair to say that the 20.1-million-pixel sensor used in the LX15 is pretty much a known quantity, and the camera delivers exactly the results we've come to expect. At ISO 125 it can deliver plenty of detail, just so long as the lens is stopped down to its optimum setting. Image quality is pretty good all the way up to ISO 1600, although fine detail tends to get smeared away. However, it's important to keep an eye on the camera's metering and get exposures as close to correct as possible, because there's not all that much leeway for adjusting exposure after the event in post-processing.

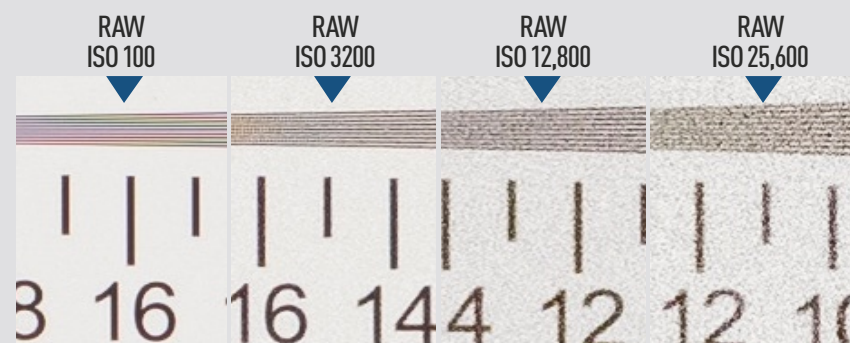
Dynamic range




The main message from our Applied Imaging dynamic range tests is that, while the LX15 scores very well at low ISO, the numbers fall off rapidly as the sensitivity is raised. A measured dynamic range of 12.3EV at ISO 100 indicates that it should be possible to pull a fair bit more detail out of dark shadows when processing raw. But by ISO 800 this is very much reduced, and at ISO 3200 and above, low readings indicate that there's very little shadow detail at all. The very low readings at the top ISO settings emphasise their poor quality.

Resolution

Below we show details from our resolution chart test pattern (right). Multiply the number beneath the lines by 200 to give the resolution in lines per picture height.



With its 20.1-million-pixel sensor the LX15 can record a whole lot of detail, and this shows in our resolution tests. As usual, it performs best in raw, and here we see it achieving around 3200l/ph at low ISO sensitivities with the lens set to 50mm (equivalent), which is about as much as we could possibly hope for. Noise has an increasing impact on detail as the ISO is raised, but by ISO 3200 resolution has only dropped to around 3000l/ph. At higher settings resolution plummets quickly, and is very low indeed at ISO 25,600.



Amateur Photographer




Image Engineering

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Noise

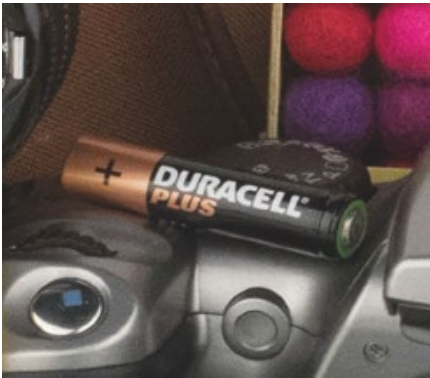
Both raw and JPEG images taken from our diorama scene are captured at the full range of ISO settings. The camera is placed in its default setting for JPEG images. Raw images are sharpened and noise reduction applied, to strike the best balance between resolution and noise.



RAW ISO 100



RAW ISO 800



RAW ISO 3200



RAW ISO 6400



RAW ISO 12,800



RAW ISO 25,600



At low ISO settings LX15 files show lots of detail with just the barest hint of noise. However on increasing the sensitivity to ISO 800, luminance noise is beginning to mask fine detail if you look at your images closely, but this is unlikely to show up in prints of 12x8in or smaller. At ISO 3200, however, there's a much greater impact, and while Panasonic's JPEG processing maintains colour well, its over-enthusiastic noise reduction smears away most fine detail. ISO 6400 is about as high as you'd ever want to go, with little in the way of shadow detail remaining, and the higher settings are very noisy indeed. Switching to raw and developing your files carefully can deliver greater levels of detail at higher ISO settings, although this will generally come at the expense of increased luminance noise. Even in raw the top two ISOs are barely acceptable.

The competition



Canon PowerShot G7 X Mark II

Price £549
Sensor 20.1MP, 1in CMOS
ISO 125-25,600 (expanded)
Lens 24-100 mm equiv f/1.8-2.8
Reviewed 2 July 2016
★★★★★



Sony Cyber-shot DSC-RX100 III

Price £529
Sensor 20.1MP, 1in CMOS
ISO 100-12,800
Lens 24-70mm equiv f/1.8-2.8
Reviewed 5 July 2014
★★★★★



Panasonic Lumix DMC-LX100

Price £499
Sensor 12.8MP Four Thirds CMOS
ISO 100-25,600 (extended)
Lens 24-75mm equiv f/1.7-2.8
Reviewed 8 November 2014
★★★★★

Read the full tests of these cameras at www.amateurphotographer.co.uk/reviews

Verdict

IN MANY respects, Panasonic has produced a very capable and likeable enthusiast zoom compact with the Lumix LX15. It's fast, well featured, and with its extensive external controls it is unusually pleasant to shoot for such a small camera. The lens is a decent performer when stopped down, although its headline specs – f/1.4 and 1cm close focus – feel more like one-upmanship than really useful photographic features. Image quality is very respectable, and generally in line with the other small cameras that use a similar 20-million-pixel, 1in sensor, while the 4K video is a standout feature.

In fact, the LX15 has certain clear advantages over both its most obvious competitors, the Sony Cyber-shot DSC-RX100 III (and its more recent iterations) and the Canon PowerShot G7 X Mark II. Compared to the Sony, the LX15 has a rather better control layout, including its responsive touchscreen, but it lacks a viewfinder. Meanwhile, compared to the Canon, the LX15 has much better video capability but a shorter lens range. All three, therefore, have a different balance of features, with no one model taking an outright lead over the others in this class.

Indeed, arguably the LX15's most capable competitor is its two-year-old big brother, the LX100, which is a really lovely camera that's now available at a very attractive price. If you can put



up with its larger body size, it's nicer to use in almost every way, with a built-in electronic viewfinder and a full set of analogue controls. But it won't fit into a jacket pocket, which is why the LX15 was born. Another stablemate, the Lumix TZ100, is also well worth considering if you'd prefer a longer zoom range (25-250mm equivalent).

Perhaps the real take-home message is that the LX15 is a very good camera, but finds itself in a market that's now looking very competitive. It's a very worthwhile alternative to its close competitors from Canon and Sony, but it doesn't quite do enough to deliver a knockout blow to either. For photographers who want good handling and high-quality video from a pocket camera, and who aren't too bothered about having a built-in viewfinder, it's a great option.

Amateur Photographer

Testbench

Recommended

★★★★★

FEATURES	9/10
BUILD & HANDLING	8/10
METERING	7/10
AUTOFOCUS	8/10
AWB & COLOUR	8/10
DYNAMIC RANGE	8/10
IMAGE QUALITY	8/10
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A visit to a hide presented the perfect vantage point to test the lens and find out how fast and sharp it is for wildlife
1/200sec at f/4, ISO 1600



Into the wild

Is Sigma's new 500mm f/4 DG OS HSM | Sport lens good enough for the finest wildlife and sports photographers?

Michael Topham spends a day with professional wildlife photographer **David Tipling** to put it through its paces



Mike used the lens with Vanguard's VEO AM-264TR monopod for extra support

As I join the A1065, pass the RAF base at Lakenheath and drive deep into Norfolk towards Holt, I listen carefully to the local radio for the next day's weather report. Dry and bright but cold is the forecast. It seems that my luck of dodging the recent dull skies and squally showers might just be in. My anxiety about tomorrow's assignment, which involves putting the latest lens in Sigma's Sport series to the test, is put at rest a little, but I must admit I'm still apprehensive about the subject I'm down to shoot.

It's at this point I should perhaps let you in on a secret. Despite having an interest in nature and attempting wildlife

photography a few times before, I always feel uneasy tackling the subject. It's a hard one to describe, but when I have attempted to photograph wildlife in the past, it always feels like I walk away with average results that never seem to do the subject or my photographic ability any justice. I put a lot of this down to my lack of expert knowledge and knowing the best locations to get into the right place at the right time.

After arriving and settling in to my bed and breakfast for the night, I drop professional wildlife photographer David Tipling a message to tell him I'm all set for our pre-arranged jaunt around the coast the next day. By shadowing an expert like David,

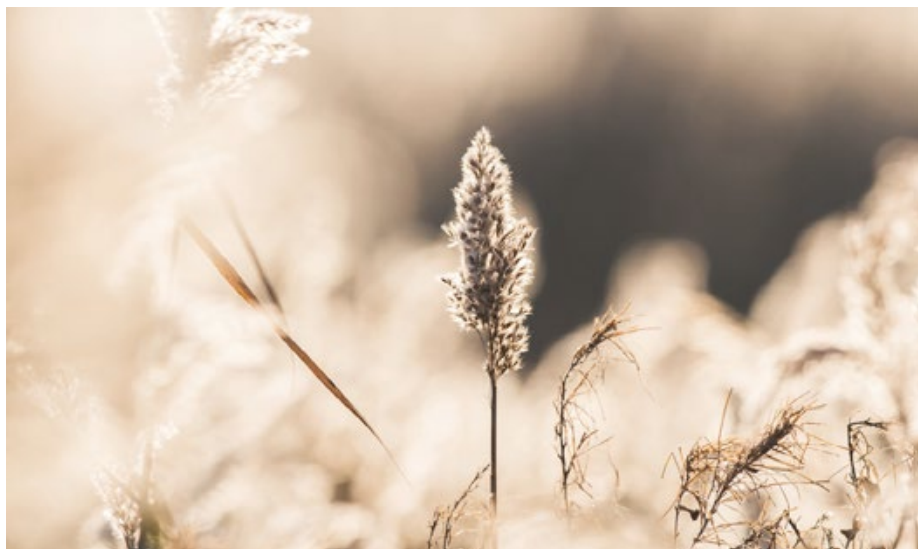
I'm optimistic that it will present opportunities to give the lens a real workout in the type of environment it will see regular use with working professionals. And who knows? A day of one-to-one tuition using a pro-spec lens might be just what I need to boost my self-confidence and change my perception of photographing such a challenging genre.

A bright and early start

The next day, I arrive at our meeting point and start by pulling my Nikon-fit sample of the lens out of its gigantic protective carry case before coupling it to my D810. I rest the body and lens on a jacket in the rear footwell of David's Land Rover so I have quick access to it should we be successful in our morning hunt for barn owls. The thick overnight frost combined with clear, blue skies and rising sun has presented conditions that are as good as they get for wildlife photography, but after an hour of searching, the only wildlife we come across is a lone pheasant. Maybe today isn't going to be my day, after all.

Despite not being the most endearing of subjects, a few shots of the pheasant





An experimental shot revealing the shallow depth of field that's created at f/4 1/640sec at f/4, ISO 100

➤ make me realise the lens isn't getting me close enough. Why didn't I pack a 1.4x or 2x teleconverter as part of my kit, I ask myself. It's at this point, I consider switching the D810 over to its DX-crop mode before mulling over the advantages of substituting it with the D500 that I packed in my bag at the last minute. With the D500 I'd be able to shoot 4fps faster than with the D810 and at higher resolution, while still getting the benefit of the 1.5x crop factor that effectively turns

the lens into a 750mm equivalent.

Relocating to Cley next the Sea presents the first opportunity to use the lens in anger. As a colony of black-headed gulls approach in the distance, I loosen the knurled collar screw and rotate the collar by 180° to make it easier to haul up a bank to a better vantage point. It dawns on me that I'm carrying over £7,000 worth of kit by the built-in rotating tripod collar alone, but the rubberised grip on the underside of the long collar handle does an excellent job of ensuring that it doesn't slip from my grasp.

'It's not a lens you'd typically associate with using handheld, but on the spur of the moment it's not unfeasible'

With no time to familiarise myself with the buttons or switches, let alone support it on my monopod, I resort to firing a few handheld shots before the gulls vanish. Protruding more than 400mm beyond the D500's lens mount and weighing over 3kg with the carbon-fibre hood attached, I take to crouching on my haunches and rest my elbow on my knee while cupping the barrel in my left palm to offer some additional support. It's not a lens you'd typically associate with using handheld, but on the spur of the moment it's not unfeasible.

Over the years, I've tested some colossal telephoto lenses and this example doesn't feel as heavy as you might expect for a pro-spec 500mm f/4 optic. A lot of this is down to the fact that the barrel is mostly made from a lightweight yet tough magnesium alloy.

Early results look promising on my camera's screen, but again I have to magnify a long way in playback mode to create a tight crop on my subjects. A few

minutes later, David suggests a visit to his hide that is set up in a few acres of local woodland, where he tells me his success rate of shooting birds up close is usually much higher. Naturally, I take him up on his offer.

During our drive to the hide, we find ourselves discussing the extortionate prices of pro-spec telephoto prime lenses and I explain how the Sigma model I'm testing is around £3,400 less than both Nikon's 500mm f/4E FL ED VR and Canon's EF 500mm f/4L IS II USM equivalents. We both come to the conclusion that the £4,999 you'd pay for the Sigma is a vast amount, but in relative terms it seems like you're getting more for your money – provided it lives up to expectations and delivers similar results and a comparable performance to its more expensive rivals, of course. David went on to make the valid comment that the price of the Sigma could be the difference between a professional like himself buying and owning a 500mm f/4

An early morning start presented the opportunity to capture this shot of a colony of black-headed gulls silhouetted against the mist. Salthouse church can be seen in the distance 1/2500sec at f/4, ISO 400





A mistle thrush bathes in a pool of water close to the hide. This is another example of an image captured at f/4 1/400sec at f/4, ISO 1600

from new and having to source a second-hand alternative, when you're never too sure about the history of it and whether it's as good as the seller makes out.

A patient wait

Within moments of stepping into the hide I can tell that it's a better environment for observing wildlife from much closer range. As David scatters bird feed on a nearby perch, I set up, screwing my monopod into the tripod bush on the lens collar before adjusting the height to match the pane of one-way glass that will keep me invisible to the wildlife just a few feet away. Opting to work without the hood allows me to push the lens right up against the glass. The way the front element is slightly set back behind a thick rubber ring also prevents any glass-on-glass contact.

To ensure I work as discreetly as possible, I check that all audible aids such as the AF beep are switched off, and take the precautionary step of turning the 90° click stops off using the new tripod collar switch that guarantees silence when shooting between landscape and portrait orientations. After a patient wait we're rewarded with blue tits and a robin feeding on the perch.

With the D500 set to its continuous high (CH) shooting

mode, I find myself using the lens at its maximum aperture of f/4 at ISO 1600 to acquire a fast enough shutter speed in the dark woodland conditions. I begin by using single-point AF-area mode (AF-S) with the back-button focusing method to quickly acquire focus and keep it locked – something that can also be achieved on the lens itself by depressing and holding one of the four focus function buttons that encircle the front of the lens. The split-second acquisition of focus in moderate low light is extremely impressive, although the 'silent' shooting conditions highlight a subtle whir that can be made out when the lens is asked to perform focusing duties across a long focus distance.

With many species of bird opting to drink from a small pool of water close to the hide and others feeding in the distance, I take my chance to try out the focus-recall function of the lens. Ensuring the beep on/off switch is disabled and the focus mode switch is set to its central memory recall setting, I use the D500's AF-ON button to obtain focus on the tip of the perch before using the memory-set button to store the focus distance.

A few minutes later, just as I'm capturing a few shots of a mistle thrush drinking



This little egret was photographed close to Brancaster – a popular spot for birdwatching 1/2500sec at f/4, ISO 400



'As I begin the long journey home on a high, I have no regrets choosing the lens I did for my assignment'

➤ within a stone's throw of the hide, David makes me aware of a woodpecker right where I'd stored the focus distance just a few moments ago. With my left hand resting on the front of the lens, I use one of the focus buttons of the lens to reacquire the same focus distance I had used in my previous perch shots and rattle out several bursts. The focus-recall function has its uses when you'd like the lens to revert to the focus position of your choice in an instant, and as I found out in practice it can make the difference between bagging an impromptu shot and missing it altogether.

On closer inspection

Several hundred shots later, David suggests moving from the hide to a new location close to Brancaster to take advantage of the late afternoon light. This presents the opportunity to photograph a variety of other species in their natural habitat, including a little egret, redshank and cormorant. An hour or so later the best of the light disappears and we make the mutual decision to retreat back to David's house to review our shots over a warming brew. It's never the same inspecting images on a camera's screen as it is on the computer, but I can already sense the image quality of the lens isn't going to disappoint. It's amazing what a few complimentary comments and tips from a professional wildlife photographer like David Tipling do for your confidence, and as I begin the long journey home on a high, I have no regrets choosing the lens I did for my wildlife assignment.

In hindsight I would have liked to try using the lens with Sigma's TC1401 1.4x teleconverter (£229) to gain extra reach and home in more tightly 1/2000sec at f/4, ISO 400



The next morning, I'm eager to inspect my images to find out if my extremely enjoyable real-world experience of using the lens in the field can be backed up an equally impressive performance in terms of image quality. After downloading all my images, I begin by examining my first series of shots, which were taken using the Nikon D810.

Although I discover that vignetting is evident in full-frame files between f/4 and f/5.6, it's ruled out by using it on APS-C. Crucially, the lens delivers tack-sharp results when used wide open, where it's likely to see most use from wildlife and sports professionals, and distortion, as to be expected, is virtually non-existent. Other than the fact it does vignette on full frame, there's very little to fault with regard to its optical performance.

AP

Our verdict

IT'S EASY to look at the price of expensive lenses such as this Sigma and immediately disregard them from your radar. While the price implies working pros specialising in sports and wildlife are the only ones ever likely to purchase such a lens, it's possible to get it in your hands for a one-off shoot, or a special event you're planning, for a fraction of the price you'd pay outright. Some lens-hire companies such as Hirecamera (www.hirecamera.com) are already starting to stock it, and for a nominal fee of £80 you'll have unlimited use of it for a day. When you start to compare this to the £115-£120 you'd spend to hire a Canon or Nikon equivalent, you realise there's good money to be saved.

Given the opportunity to get back out and shadow a working wildlife photographer like David Tipling again, I wouldn't spare a second thought to splash out and hire the Sigma 500mm f/4 DG OS HSM | Sport. The crisp results you can get from it make it worth every penny of the hire fee.



It's a vast lens to cart around, but the results certainly outweigh any impracticalities of its handling and weight



The memory recall function played a role in capturing this shot of a great spotted woodpecker. It's used to save your focus distance and you have the option to recall it at any time from a touch of a button 1/160sec at f/4, ISO 1250

ROUND THREE
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AFOY

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Your chance to enter the UK's best competition for budding amateur filmmakers

ROUND Three of our Amateur Filmmaker of the Year (AFOY) competition for 2017 is now open. AFOY challenges you to get creative with your filmmaking, and gives you the opportunity to win some fantastic prizes worth more than £13,000 in total.

The competition is split into three rounds, each with its own

theme: Travel, Environment and People. To enter, submit a video no more than five minutes in length, of HD quality. You can shoot on any camera, and the content and editing are up to you – so long as it fits the round's theme (see below).

Visit www.thevideomode.com to view the top videos, as well as

the scores and a leaderboard for the overall competition. The winner will be the entrant with most points after three rounds, who will win the overall prize and the title Amateur Filmmaker of the Year 2017.

Round Three (People) is open now and when entering, make sure you fulfil the brief.

Round Three: People

You could shoot a documentary about a person and their life, or you could turn it into a spoof. It could be an interview with someone telling their story, interspersed with images and video clips, or you might like to view people in general by looking at different characters, ages and races.

Rounds and dates Below is a list of the rounds, their themes and the dates you need to know. To view the results, visit www.thevideomode.com. Don't forget you will also be judged on creativity and technical excellence.

Theme	Opens	Closes
Round One: Travel	1 Sept	31 Oct
Round Two: Environment	1 Nov	31 Dec
Round Three: People	1 Jan	28 Feb

The overall winner will be announced in March 2017

Prizes Enter to win your share of prizes worth more than £13,000!

Round One Winner
Canon XC10+
Directional Mic DM-E1
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Runner-Up
Canon LEGRIA Mini X
Worth £300

Round Two Winner
Canon EOS 7D Mark II, EF 24-105mm
f/4L IS USM, EF 50mm f/1.8 STM and
EF-S 10-18mm f/4.5-5.6 IS STM
Worth £2,475
Runner-Up Canon Directional Mic
DM-E1 Worth £274.99

Round Three Winner
Canon EOS 5D Mark III and EF
24-105mm f/4L IS USM
Worth £3,199
Runner-Up
Canon Directional Mic DM-E1
Worth £274.99

Overall prize Canon EOS C100 Mark II and 24-105mm Worth £4,625

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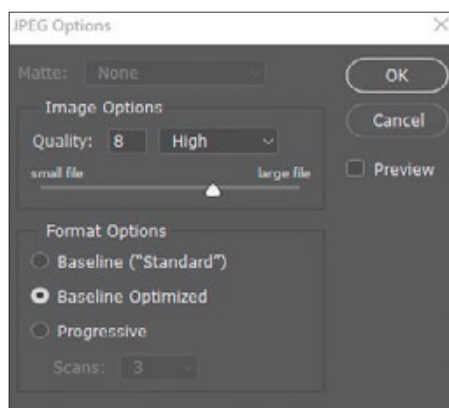


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Photoshop's JPEG saving options

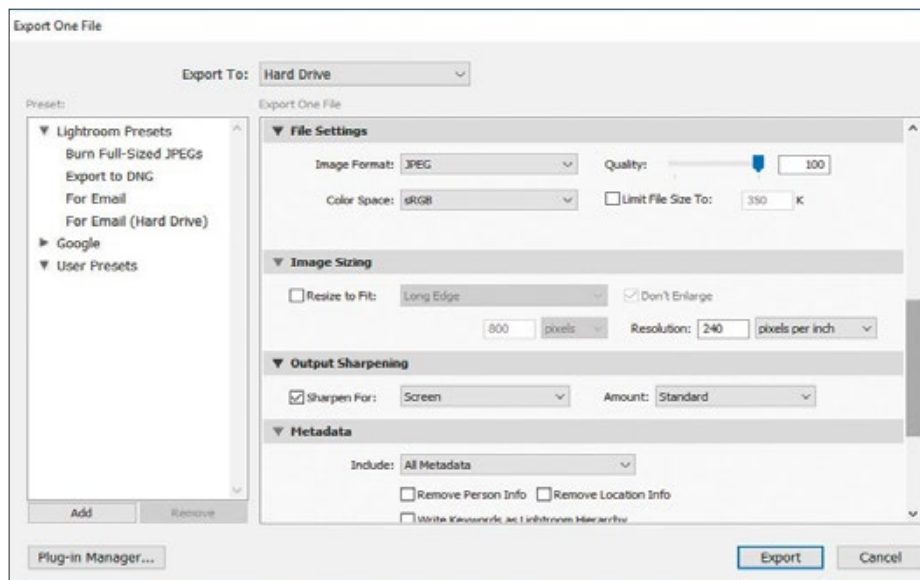
Lightroom and Photoshop file size anomalies

Q I noticed that if I exported an image as a JPEG from both Lightroom and Photoshop, the Photoshop export was always a bigger file, even though physical and pixel dimensions were identical. The difference was never much (typically an increase from Photoshop of about 5-7%) and it never happened with TIFF files. Given the two applications share so much of their processing engine, I was curious about this difference and whether there would be any noticeable difference if the two files were printed. The file sizes in question were 15.8MB and 17MB for the JPEGs and 324MB for the TIFFs, with dimensions of 30in x 20in and 6000 x 9000 pixels.

Ian Clark

A I am not so sure that your suspicion Lightroom and Photoshop share exactly the same image processing engines is on the mark. The two certainly share common code when it comes to Adobe Camera Raw for processing the basic image edits, but I have always thought the export processing was different.

For a start, Lightroom offers sharpening on export by default and Photoshop doesn't. Photoshop JPEG output processing also offers options Lightroom doesn't. Even if the underlying algorithms were the same, ensuring the exact same settings were applied would be very difficult. JPEGs are, of course, compressed and data can be lost as well. TIFFs can be compressed or uncompressed and if compressed can be lossless. It's therefore not surprising that your TIFF files can be of the same size when exported from either application. In theory, if a file is compressed and the format is not lossless, the larger the file the better. However, if there is only a marginal difference in the file size then you may struggle to find a difference in quality between prints from either application.



Lightroom's JPEG quality scale runs up to 100, while Photoshop's goes to 12



Old slide projectors might still be well worth repairing

Where to get projectors repaired?

Q I am still using my Olympus OM2SP to shoot slide film, but my slide projectors are now getting rather old. Do you know of a company that might be able to repair a Reflecta AF Lumen 750 and a Braun Novamat M 350?

Nigel Johnson

A There are still workshops that specialise in servicing projectors of all sorts and one that caught my eye is a chap in Stanmore, Middlesex, who appears to offer a very reasonably priced service. I contacted him and he says he will evaluate a projector for repair for around £15-20. His main business is servicing cine projectors, but he is also experienced with slide projectors. Not having used him myself, this is not a recommendation, but based on my conversation with him he sounds like a worthwhile contact. His name is John White and his website is www.the8mmshedshop.co.uk. You can call him on 020 8204 8434. Let us know how you get on!

A camera for climbing

Q I'm going to be climbing Mount Kilimanjaro this year. I have a Pentax DSLR, but would like to take something much lighter. Which compact camera produces the best scenic shots in a light but durable package, and isn't fiddly to use with gloves on? I'm more than happy to look at 'last year's model' if it means I might get more of a bargain.

Emlyn Williams

A All small cameras will be challenging when used with gloves on. You could use some thin inner gloves that

remain on when you remove more substantial outer gloves or mittens. Advice from our technical editor Andy Westlake points towards the Panasonic LX100 or Canon G7 X or G7 X Mark II. He points out that Sony RX100 models are not very good for use with gloves on. A mirrorless system camera such as the Olympus OM-D E-M10 Mark II could be a good choice, or even a used OM-D E-M5 (Mark I), which is also dust and moisture proof when used with a similarly protected lens, such as the M.Zuiko 12-50mm kit zoom.

Q&A compiled by Ian Burley

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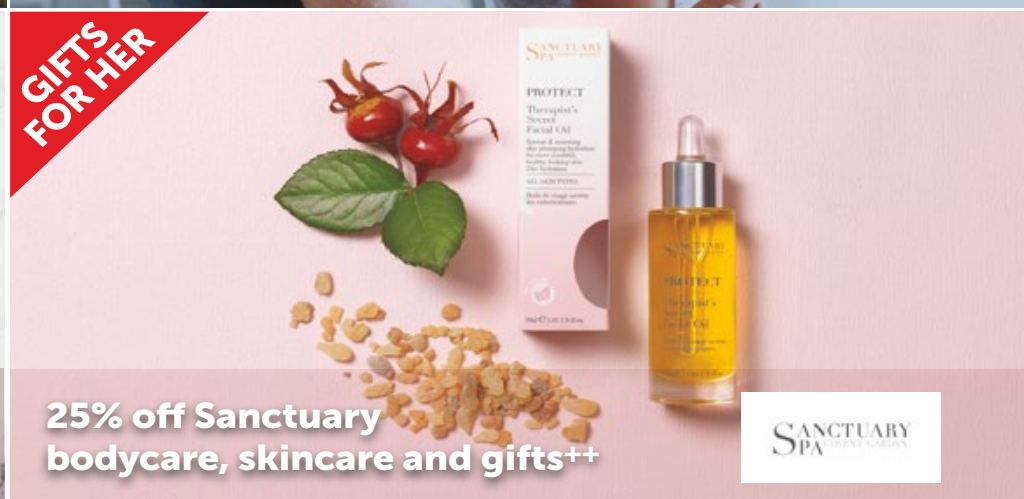
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In the bag



Landscape and travel photographer David Clapp began his creative

journey with music, playing guitar and using sequencing software, which he reckons made Photoshop easier to figure out. He works for a number of magazines, and teaches workshops for Light and Land.

www.davidclapp.co.uk

Canon EOS 5D Mark IV

1 This is an incredible camera, and persuaded me to retire my beloved Canon EOS 6D from my main landscape camera to backup status. I require GPS at all times when I travel, but the EOS 5D Mark IV takes the 6D essentials and pushes them into orbit.

Canon EOS 6D infrared

2 I really enjoy shooting infrared, and use it across all genres. My camera was converted at ACS (<http://advancedcameraservices.co.uk>) and has a 665 IR filter, which has more colour than the standard 720nm. With GPS and Wi-Fi, the camera is unbeatable as an infrared camera.

Canon 24mm TS-E f/3.5L II

3 This is the most frequently used lens in my kit bag – I've used it so much that the shift mechanism had to be rebuilt by Canon! I find it essential for shooting travel and architecture. I use it with a 1.4x III converter to get a 35mm TSE.

Canon 24-105mm f/4L IS II

4 This is a new lens for me – intended to replace my 24-70mm f/4L IS. The IS performance is exceptional, and although it is slightly heavier than the old 24-105mm, it's easy to get used to.

Canon 100-400mm f/4-5.6L IS

5 This is an amazingly versatile lens, if rather heavy. The IS technology is superb, and it's super sharp. The lens also has incredible close focusing macro ability. This lens has now replaced my beloved 70-300mm

f/4-5.6L IS (which I kept for a super-lightweight set-up).

iPad Mini 2

6 The iPad Mini 2 is such a powerful tool, and can be used for everything from offline mapping to

working from a café table. It has such a small footprint that it fits into the flap on the front of my bag.

List of kit Canon EOS 5D Mark IV, Canon EOS 6D infrared, Canon 16-35mm f/4L IS, Canon 24mm TS-E f/3.5L II, Canon 24-105mm f/4L IS II, Canon 100-400mm f/4-5.6L IS, 1.4x III extender, polarisers and ND filters, iPad Mini 2, Think Tank StreetWalker Pro.



A power station in northern Iceland taken with David's Canon EOS 5D Mark IV



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Professor Newman on...

The information in your photos

Just what is the information captured in an image and how can it be put to best use?

Just how much information do your image files contain? At one level, this is a philosophical question that I'm wont to avoid for the purposes of this article in favour of a more conventional data-theoretic approach. In that context, information is often referred to as 'data plus meaning'. As an example, consider that a raw capture will always contain the same amount of data, the number of pixels in the frame times the number of bits in each pixel. Thus, the amount of data produced is fixed.

However, not all of that data has meaning. In the rather simplistic manner of engineers (compared to philosophers) we can define 'meaning' quantitatively as providing one from a range of available values. For example, if a traffic light can indicate red, amber, green or red-amber, we have four available values and we can establish the meaning of that signal only within those choices.

Now let us examine the meaning of a pixel in a raw file against that

'Every value read from the sensor, regardless of its size, is subject to a level of uncertainty'

criterion. It will tell us that the amount of meaning (and therefore information) in the pixel is determined by how many values it can take, which is at first sight the same as the data size. So, if our pixel is described by 14 bits of data, it can take 2^{14} (16,384) different values. However, it's more complicated than that. The highest value that a pixel can take depends on the exposure used and the ISO setting. If we had selected an exposure such that the highest possible pixel value, given the amount of light captured by the camera was 10,000 then in each pixel we will have 6,384 values containing no information, because they will never be found in the file. Thus the highest actual level found determines the top limit of information. At the other end the limit is noise. Noise is random variation caused by a

number of phenomena, and since it is unpredictable, it carries no information. One source of noise in our photos is electronic, usually called 'read noise', which means that every value read from the sensor, regardless of its size, is subject to a level of uncertainty. Let's imagine that the uncertainty is plus or minus five values, or ten values in all. That means that any reading has a range of possible values, reducing the number of meaningful readings by a quotient equal to the noise value. So in this case, the 10 values of randomness reduces the information content from 10,000 choices to 1,000.

Therefore, to maximise information content in a photograph we must maximise the signal level (exposure) and minimise the electronic noise added. More information on that in my next article.



The first crop has an exposure four times larger than the second, so contains much more information. But both contain more information than can be delivered by the printing process, so the difference is invisible

Bob Newman is currently Professor of Computer Science at the University of Wolverhampton. He has been working with the design and development of high-technology equipment for 35 years and two of his products have won innovation awards. Bob is also a camera nut and a keen amateur photographer

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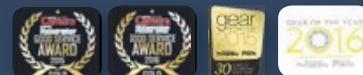
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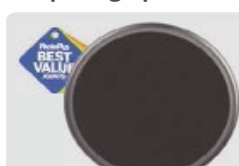


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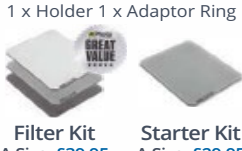


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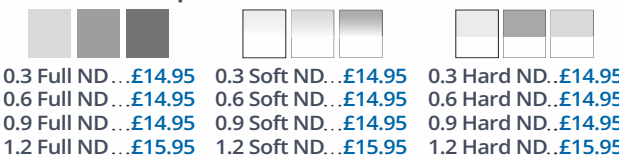


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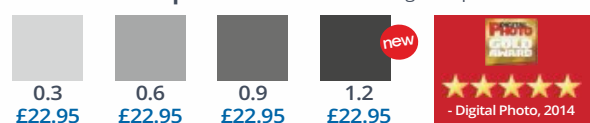
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LEICA 135mm f4.5 HEKTOR + HOOD M MOUNT.....	EXC++ £99.00
LEICA 135mm f4.5 HEKTOR IN KEEPER.....	EXC+++ £199.00
LEICA FIT DALLMEYER 13.5CM F4.5 DALRAC.....	EXC+++ £375.00
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6.0 fps
1080p movie mode
Full Frame CMOS Sensor

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10.0 fps
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D500 Body **£1729**

D500 Body **£1729**
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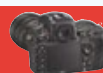


Nikon D810
36.3 megapixels
5.0 fps
Full Frame CMOS Sensor

D810 From **£2399**

D810 Body **£2399**

Read our D810 review on our blog at wex.co.uk/blog



The new Nikon D5 – A flagship power

Equipped with Nikon’s incredible next-generation 153-point AF system, the D5 keeps you on track whether you’re shooting the race or the red carpet. Coverage is exceptionally wide, and a new buffer allows up to 200 NEF (RAW) images to be captured during one high-speed burst. New image and metering sensors deliver phenomenally accurate subject recognition and image detail. The highest expanded sensitivity in Nikon’s history frees you to shoot from bright sunlight to astronomical twilight. And for moviemakers who go to extremes, D-Movie now enables high-definition 4K/UHD movies to be recorded in-camera.

New D5 Body **£5099**



New D5 Body

from **£5099**

SONY

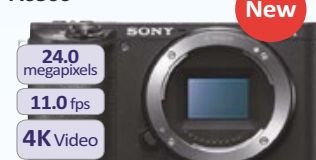


A7R II Black
42.4 megapixels
5.0 fps
4K Video

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A6500



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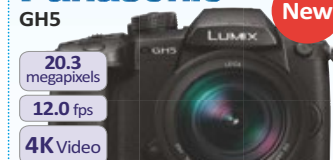


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12.0 fps
4K Video

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Panasonic

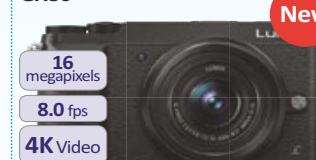


GH5
20.3 megapixels
12.0 fps
4K Video

GH5 **£2199**

GH5 Body **£1699**
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GH5 + 12-60mm **£1899**
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GX80



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8.0 fps
4K Video

GX80 **£549**

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60 fps
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16.3 megapixels
8.5 fps

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6.5 fps
Full Frame CMOS Sensor

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24.3 megapixels
14.0 fps

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X-T2 + 18-55mm **£1649**
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X-Pro2



24.3 megapixels
8 fps
1080p movie mode

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24.7 megapixels 5.0 fps 1080p movie mode

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750D + 18-55mm £649
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80D

24.2 megapixels 7.0 fps 1080p movie mode

80D From £999

80D Body £999
80D + 18-55mm £1029
80D + 18-135mm £1219

CUSTOMER REVIEW: EOS 80D + 18-135mm IS STM
★★★★★ 'An excellent step up' Adam – Portsmouth

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EOS 7D Mk II

20.2 megapixels 10.0 fps 1080p movie mode

7D Mk II Body £1249

7D Mark II Body £1249

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EOS 6D

20.2 megapixels 4.5 fps 1080p movie mode Full Frame CMOS sensor

6D Body £1449

6D Body £1449
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5DS R

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5DS R Body £2899

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• 9.4cm Min Height

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• 9cm Min Height

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MT190XPRO4 £159
MT190CXPRO3 Carbon Fibre £229
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• 25.7cm Height

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Macro flash:

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20.3
MEGA
PIXELS

9 fps

3.2"

PHOTO

4K

Delivering incredible 18 MP 6K Photo stills, recording 60p 4K Video - and silent & unobtrusive quick focus make this an outstanding camera for photographers and videographers.

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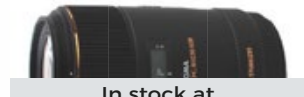
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SIGMA LENSES

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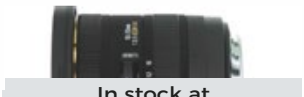
Sigma 105mm f/2.8 EX DG HSM



In stock at
£319.00

Add a Sigma 62mm WR UV filter for only £39.99

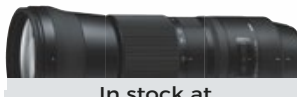
Sigma 10-20mm f/3.5 EX DC HSM



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Sigma 150-600mm f/5-6.3 DG OS HSM | C



In stock at
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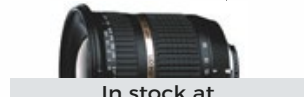
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4.5mm f/2.8 Fisheye EX DC	£619.00	300mm f/2.8 APO EX DG	£2,599.00	50-100mm f/1.8 DC HSM	£829.00
8mm f/3.5 Circ. Fish EX DG	£599.00	500mm f/4 APO EX DG	£4,999.00	50-500mm f/4.5-6.3 OS HSM	£1,099.00
15mm f/2.8 Diag F/eye EX DG	£599.00	8-16mm f/4.5-5.6 DC HSM	£499.00	70-200mm f/2.8 EX DG OS	£729.00
19mm f/2.8 DN	£129.00	10-20mm f/3.5 EX DC HSM	£329.00	70-300mm f/4.0-5.6 DG	£99.00
20mm f/1.4 DG HSM	£629.00	12-24mm f/4.5-5.6 II DG HSM	£529.00	70-300mm f/4.0-5.6 APO	£149.00
24mm f/1.4 DG HSM	£599.00	17-50mm f/2.8 DC OS HSM	£279.00	120-300mm f/2.8 OS HSM	£2,499.00
30mm f/1.4 DC HSM	£319.00	17-70mm f/2.8-4 DC OS	£319.00	150-600mm Cont. + 1.4x	£849.00
30mm f/2.8 DN	£129.00	18-35mm f/1.8 DC HSM	£549.00	150-600mm f/5-6.3 Sport	£1,199.00
35mm f/1.4 DG HSM	£599.00	18-200mm DC OS HSM	£269.00	150-600mm Sport + 1.4x	£1,299.00
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85mm f/1.4 EX DG HSM	£999.00	18-300mm f/3.5-6.3 DC Macro	£349.00	1.4x APO EX DG	£179.00
105mm f/2.8 EX DG OS HSM	£319.00	24-35mm f/2 DG HSM Art	£699.00	1.4x Teleconverter TC1401	£229.00
150mm f/2.8 OS Macro	£649.00	24-70mm f/2.8 IF EX DG	£549.00	2.0x APO EX DG	£199.00
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Tamron SP 10-24mm f/3.5-4.5 Di-II LD Asph.



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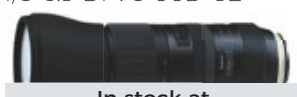
Tamron 18-200mm f/3.5-6.3 Di II VC



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£199.00

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Tamron SP 150-600mm f/5-6.3 Di VC USD G2



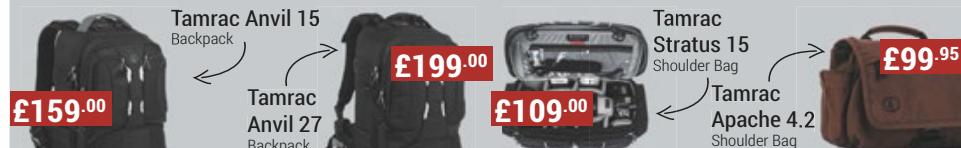
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Add a Kenko 95mm Digital MC UV filter for only £119.00

SP 35mm f/1.8 Di VC USD	£599.00	16-300mm f/3.5-6.3 Di II VC	£429.00	28-300mm f/3.5-6.3 XR Di LD	£599.00
SP 45mm f/1.8 Di VC USD	£599.00	SP 17-50mm f/2.8 XR Di II VC	£399.00	28-300mm f/3.5-6.3 Di VC PZD	£599.00
SP 60mm f/2.0 Di II LD [IF]	£599.00	SP 17-50mm f/2.8 XR Di II	£399.00	SP 70-200mm f/2.8 Di LD [IF]	£549.00
SP 90mm f/2.8 Di VC USD	£599.00	18-200mm f/3.5-6.3 Di II VC	£299.00	70-200mm f/2.8 Di VC USD	£1,099.00
SP 90mm f/2.8 Di MACRO VC	£369.00	18-200mm f/3.5-6.3 Di III VC	£389.00	70-300mm f/4-5.6 Di LD	£129.00
14-150mm f/3.5-5.8 Di III	£439.00	SP 24-70mm f/2.8 Di VC USD	£799.00	SP 70-300 f/4-5.6 Di VC USD	£299.00
SP 15-30mm f/2.8 Di VC USD	£929.00	SP 28-75mm f/2.8 XR Di LD	£399.00		

tamrac

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£199.00

£109.00

£99.95

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24
MEGA
PIXELS

5 fps

ISO
SETTING
DIAL

3.0"

SD
card

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MEGA
PIXELS

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FILM
MODES

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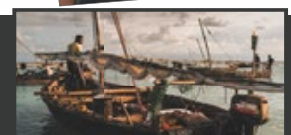
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100mm F4 E Macro	E+ £145
150mm F3.5 E.....	As Seen / E+ £29 - £109
180mm F4.5 PE.....	E+ £149
200mm F4.5 E.....	E+ / E++ £55 - £129
200mm F5.6 E.....	E++ £79
250mm F5.6 E.....	E+ / E++ £89 - £99
Extension Tube E14.....	E+ / Unused £39 - £79
Extension Tube E42.....	E++ £39
Pro Shade E.....	E+ £25
Polaroid Mag E.....	E+ £25
Prism Finder E.....	As Seen £20

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EOS 1 + E1 Booster.....	As Seen £79
EOS 1 Body Only.....	E+ £59 - £79
EOS 5 Body Only.....	E+ £59
EOS 30E Body Only.....	As Seen £39
EOS 50E Body Only.....	E+ £39
EOS 55 + Tamron 28-70mm.....	E++ £69
EOS 55 Body Only.....	E+ / E++ £39 - £49
EOS RT Body Only.....	Unused £149
10-22mm F3.5-4.5 EFS.....	E+ / E++ £249
14mm F2.8 L USM.....	Exc £399
14mm F2.8 L USM II.....	E+ / Mint- £899 - £1,089
15mm F2.8 EF Fisheye.....	E++ £449
15-85mm F3.5-5.6 IS USM.....	E++ £379
16-35mm F2.8 L USM MKII.....	Mint- £959
17-55mm F2.8 EFS IS USM.....	E+ / E++ £299 - £379
17-85mm F4-5.6 IS USM.....	E+ / E++ £129 - £139
18-55mm F3.5-5.6 EFS II.....	E++ £49
18-55mm F3.5-5.6 EFS III.....	E++ £49
18-55mm F3.5-5.6 IS STM.....	E++ £79
18-135mm F3.5-5.6 IS.....	Mint- £239
20-35mm F3.5-4.5 USM.....	E++ £149
22mm F2 STM.....	E++ / Mint- £89 - £99
24mm F1.4 L USM.....	E++ £699
24mm F1.4 L USM MKII.....	Mint- £1,159
24mm F2.8 EF.....	As Seen £129
24mm F3.5 L TSE.....	E+ / Mint £619 - £724
24-85mm F3.5-4.5 USM.....	Mint- £149
24-105mm F4 L IS USM.....	E+ £349 - £369
28-105mm F4-5.6 EF.....	Unused £99
28-105mm F4-5.6 USM.....	Mint- £119
35-105mm F4.5-5.6 EF.....	Mint- £69
35-135mm F3.5-4.5 EF.....	E+ £69
35-135mm F4-5.6 USM.....	E+ / Unused £75 - £139
35-350mm F3.5-5.6 L USM.....	E++ £599
40mm F2.8 STM.....	E++ £99
50mm F1.2 L USM.....	E++ £749
50mm F1.8 EF Mk1.....	E++ £89
50mm F2.5 EF Macro.....	Mint- £159
55-250mm F4-5.6 IS STM.....	Mint- £129
70-300mm F4.5-5.6 DO IS USM.....	E++ £379
80-200mm F4.5-5.6 EF II.....	E+ / Mint- £39 - £45
85mm F1.2 L USM MkII.....	Mint- £1,149
100mm F2.8 USM Macro.....	E++ £259
100-400mm F4.5-5.6 L IS USM.....	E+ £589
135mm F2 L USM.....	E++ £529 - £549
135mm F2.8 Soft Focus EF.....	Unused £199
300mm F2.8 L IS USM.....	Exc £1,789
300mm F2.8 L IS USM MKII.....	Mint- £4,489
300mm F2.8 L USM.....	Exc £1,149
300mm F4 L USM.....	Exc £389
400mm F5.6 L USM.....	E+ £679
500mm F4 L IS USM.....	E+ / E++ £3,599 - £3,789
500mm F4.5 L USM.....	E+ £2,159
600mm F4 L IS USM.....	E+ £5,149
600mm F4 L USM.....	Exc / E+ £2,169 - £2,849
Contax 35-70mm F3.4 MM.....	E++ £259
Contax 35-135mm F3.3-4.5 MM.....	E++ £399
Sigma 10-20mm F4-5.6 DC HSM E+ / Mint- £179 - £219	
Sigma 12-24mm F4.5-5.6 EX DG HSM MKII.....	E++ £425
Sigma 24-70mm F2.8 EX DG.....	E+ £179
Sigma 50-500mm F4-6.3 Apo DG HSM.....	E++ £399
Sigma 70mm F2.8 EX DG Macro.....	E++ £169
Sigma 70-210mm F2.8 Apo.....	E+ £149
Sigma 70-300mm F4-5.6 Apo DG.....	E++ £69
Sigma 120-400mm F4.5-5.6 APO DG OS HSM.....	E+ / E++ £329 - £359

Sigma 150mm F2.8 EX DG Macro HSM.....	E++ £299
Sigma 170-500mm F5-6.3 Apo.....	E+ £149
Sigma 180mm F3.5 EX Macro APO.....	E++ £349
Sigma 300mm F2.8 Apo.....	Unused £299
Sigma 300mm F2.8 Apo DG HSM ...	E++ £1,289 - £1,499
Sigma 300mm F4 Apo.....	E+ / E++ £149 - £159
Sigma 400mm F5.6 AF.....	E+ £79
Sigma 500mm F4.5 Apo EX HSM.....	E+ £1,689
Tamron 18-200mm F3.5-6.3 Di III VC.....	Mint- £249
Tamron 90mm F2.8 SP AF Macro..	E+ / E++ £159 - £179
Tamron 200-400mm F5.6 LD.....	E++ £189
Tokina 11-16mm F2.8 DX ATX.....	Mint- £299
Tokina 16-28mm F2.8 ATX FX.....	E++ £439
Tokina 28-80mm F2.8 ATX Pro.....	E++ £179
Tokina 35mm F2.8 Macro DX ATX.....	E++ £199
Tokina 50-135mm F2.8 DX ATX.....	E++ £249
Tokina 300mm F2.8 ATX SD.....	E+ £599
Zeiss 100mm F2 Makro Milvus ZE.....	Mint- £1,049
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2x EF II Extender.....	E+ / E++ £129 - £159
Metz 15 MS-1 Wireless Flash.....	E++ £149 - £179
Metz 48AF1 Digital.....	As Seen £39
Metz 50AF1 Digital.....	E++ £79
300EZ Speedlite.....	E+ / E++ £9 - £29
380EX Speedlite.....	E+ £69
420EZ Speedlite.....	E+ £25
430EZ Speedlite.....	E+ / E++ £25 - £29
540EZ Speedlite.....	E+ / E++ £35 - £39
550EX Speedlite.....	E+ £129
580EX MkII Speedlite.....	E+ / E++ £169 - £189
580EX Speedlite.....	E+ / E++ £129 - £149
90EX Speedlite.....	E+ £49
ML3 Macrolite.....	E++ £39
MR-14EX Macro Ringlite.....	E+ / E++ £169 - £179
ST-E2 Transmitter.....	E+ / E++ £59 - £69
ST-E3 RT Transmitter.....	Mint- £185
EF12 MkII Extension Tube.....	Mint- £39 - £49
EF25 Extension Tube.....	E++ £49
EF25 II Extension tube.....	Mint- £69
Novoflex Auto Bellows.....	Unused £249
Novoflex EOS Reverse Adapter ...	E+ / Unused £99 - £119
Tripod Mount Ring A (W).....	Mint- £49
Tripod Mount Ring All (W).....	E++ £59
Tripod Mount Ring B (B).....	Mint- £49

Contax 645 Series

35mm F3.5 Distagon.....	E+ £449 - £799
45mm F2.8 Distagon.....	E+ / E++ £299 - £349
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120mm F4 Apo Macro.....	E+ / E++ £449 - £899
140mm F2.8 Sonnar.....	E+ / Mint- £249 - £449
210mm F4 Sonnar.....	E+ / Mint- £249 - £499
350mm F4 Tele Apo Tessar.....	E++ £3,999
220 Vacuum Film Insert.....	E++ / Mint- £89 - £99
GB71 Hood.....	E+ / E++ £49 - £79
GB74 Hood (210mm).....	E+ £39
H10 Digital Back.....	As Seen £499
MFB-2 Polaroid Mag.....	Exc / E++ £35 - £99
MSB1 Flash Bracket.....	E++ £199

Digital Mirrorless

Fuji X-Pro2 Body Only.....	E++ £989
Fuji X-T1 Body Only.....	E+ / Mint- £419 - £519
Fuji X-T10 Black Body Only.....	Mint- £349
Fuji X-E2 Body Only.....	E++ £299
Fuji X-A1 Black Body + 16-50mm XC.....	E++ £239
Fuji X-M1 Black Body Only.....	E++ £149
Fuji Finepix X100.....	E++ £349
Nikon V2 Black + 10-30mm.....	E++ £349
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Olympus E-M5 Black Body + RRS Grip	E++ £279
Olympus E-M5 Black Body Only.....	E+ £249
Olympus E-M1 Black Body Only.....	E++ £479 - £499
Olympus E-P1 + 14-42mm.....	E++ £119
Olympus E-P2 Black + 14-42mm.....	E++ £129
Olympus E-P2 Black Body Only.....	E+ £69
Olympus E-PL2 Body Only.....	E++ £79 - £89
Olympus E-PL3 Body Only.....	E++ £79
Olympus E-PM1 + 14-42mm.....	E++ £109
Olympus E-PM1 Purple Body Only.....	E++ £49

Panasonic GF-5 Body Only.....	E++ £79
Panasonic GX7 Body Only.....	As Seen £249
Samsung NX10 + 18-55mm.....	E++ £159
Sony A7 II Body Only.....	E++ £989
Sony A7R Body Only.....	E++ £889
Sony A7R II Body Only.....	E+ / Mint- £2,199 - £2,499

Fuji X Lenses

14mm F2.8 XF.....	E++ £549
18-55mm F2.8-4 XF.....	E++ £299
18mm F2 XF R.....	Mint- £219 - £229
23mm F1.4 XF R.....	Mint- £549
27mm F2.8 XF.....	E++ / Mint- £199 - £209
35mm F2 XF WR.....	Mint- £269
50-140mm F2.8 WR OIS XF.....	Mint- £949
50-230mm F4.5-6.7 OIS XC.....	E++ £199 - £239
56mm F1.2 RAPD XF.....	Mint- £849
Zeiss 12mm F2.8 Touit X.....	Mint- £549

4/3rds Lenses

Olympus 7-14mm F4 ED Zuiko.....	E++ £549 - £579
Olympus 8mm F3.5 FishEye Zuiko D.....	E++ £299
Olympus 11-22mm F2.8-3.5 Zuiko.....	E++ £199 - £229
Olympus 12-60mm F2.8-4 ED SWD.....	E+ £219 - £349
Panasonic 14-150mm F3.5-5.6 Asph..	E+ / E++ £349 - £439
Olympus 14-42mm F3.5-5.6 Zuiko.....	E+ £39
Olympus 14-54mm F2.8-3.5 Zuiko. E+ / E++ £99 - £129	
Samyang 16mm F2.0 ED AS UMC CS.....	Mint- £249
Olympus 18-180mm F3.5-6.3 Zuiko.....	E++ £199
Olympus 35mm F3.5 Macro Zuiko.....	E++ £99
Olympus 40-150mm F3.5-4.5 Zuiko. E+ / E++ £49 - £89	
Olympus 40-150mm F4-5.6 ED Zuiko.....	E++ £49
Olympus 50-200mm F2.8-3.5 SWD.....	E++ £349 - £429
Olympus 50mm F2 ED Macro Zuiko.....	E++ £199 - £249
Olympus 70-300mm F4-5.6 ED Zuiko.....	E++ £219
Sigma 105mm F2.8 EX DG Macro.....	E++ £169
Sigma 150mm F2.8 Apo DG Macro.....	E++ £249
Olympus EC14 Tele Converter.....	E++ £199
Olympus EC20 2x Tele Converter.....	E++ £229

Micro 4/3rds Lenses

Panasonic 7-14mm F4 G Vario.....	E++ £549
Olympus 12-40mm F2.8 M.ZuikoE++ / Mint- £499 - £549	
Olympus 12-50mm F3.5-6.3 M.Zuiko... Exc / E++ £79 - £139	
Olympus 12mm F2 ED M.Zuiko.....	Mint- £439
Samyang 12mm F2 NCS CS - Black.....	E++ £199
Walimex 12mm F2.2 CS NCS.....	Mint- £199
Panasonic 14-140mm F4-5.8 OIS.....	E++ £239
Panasonic 14-42mm F3.5-5.6 Asph OIS.....	E++ £79
Panasonic 14-45mm F3.5-5.6 ASPH G Vario ...	E+ / E++ £99 - £129
Olympus 15mm F8 Body Cap Lens.....	Mint- £45
Olympus 17mm F2.8 M.Zuiko.....	E++ / Mint- £109 - £129
Voigtlander 25mm F0.95 Nokton.....	E+ £399
Olympus 25mm F1.8 M.Zuiko - Black.....	E++ £219
Panasonic 35-100mm F4-5.6 OIS Asph G.....	Exc £79
Olympus 40-150mm F4-5.6 R ED M.Zuiko.....	E++ £89
Panasonic 42.5mm F1.2 Asph OIS.....	Mint- £849 - £889
Panasonic 45-200mm F4-5.6 OIS.....	E++ £169
Olympus 45mm F1.8 M.Zuiko.....	E++ £139
Panasonic 45mm F2.8 DG Asph Macro ..	E+ / Mint- £349 - £369

Sony NEX Lenses

16-35mm F4 FE ZA OSS.....	Mint- £739
18-200mm F3.5-6.3 OSS.....	E++ £399
24-70mm F4 FE ZA OSS.....	E++ £599
28-70mm F3.5-5.6 FE OSS.....	E++ £279
35mm F2.8 FE ZA.....	E++ £419
50mm F1.8 OSS.....	Mint- £189
55mm F1.8 FE ZA.....	E++ £499
70-200mm f4 G OSS FE.....	E++ / Mint- £819 - £839
Zeiss 50mm F2 Loxia.....	Mint- £549

Digital SLR Cameras

Canon EOS 1D MKIV Body Only..	E+ / E++ £999 - £1,449
Canon EOS 1D MKIII Body Only.....	E+ £249
Canon EOS 1D MkII Body Only ..	As Seen / E+ £199 - £299
Canon EOS 5DS Body Only.....	Mint- £2,359
Canon EOS 5D MKIII Body Only E+ / E++ £1,449 - £1,849	
Canon EOS 5D MkII Body + BG-E6 Grip ...	E+ £689 - £789
Canon EOS 5D MkII Body Only.....	E+ / E++ £689 - £799
Canon EOS 5D + BG-E4 Grip.....	E+ £279
Canon EOS 6D Body Only.....	E+ / E++ £849 - £869

Canon EOS 7D + BG-E7 Grip.....	E+ £469
Canon EOS 7D Body Only.....	E+ / E++ £349 - £389
Canon EOS 70D Body Only.....	E++ £589
Canon EOS 30D Body Only.....	E+ £99
Canon EOS 20D Body Only.....	Exc £69
Canon EOS 350D Body Only.....	E+ £59
Canon EOS 300D + BG-E1 Grip.....	As Seen £49
Canon EOS 300D Body Only.....	As Seen £45
Canon EOS M3 + 18-55mm + DC1 Finder.....	E++ £399
Minolta Dynax 7D + VC-7D Grip.....	As Seen £95
Nikon D4S Body Only.....	Mint- £3,399
Nikon D4 Body Only.....	Exc / E++ £2,099 - £2,499
Nikon D2X Body Only.....	As Seen / E+ £249 - £299
Nikon Df + 50mm F1.8 G + DF-GR1 Grip.....	Mint- £1,750
Nikon Df + 50mm F1.8 G Edition.....	Mint- £1,750
Nikon D810 Body Only.....	E++ £2,049
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Nikon D200 Body Only.....	E+ / E++ £129 - £179
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50mm F2.8 FE.....	E+ £649
50mm F4 CF FLE.....	E+ £699
50mm F4 Cfi FLE.....	E++ / Mint- £849 - £899
50mm F4 Cfi FLE + Hood.....	E++ £1,089
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120mm F4 CFE Macro.....	E++ £849
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2xE Converter.....	E++ £239
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E24 Black Mag.....	E+ / Mint- £169 - £199
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Proflash 4504.....	E+ £159
PME3 Meter Prism.....	E++ £289
PME51 Meter Prism.....	Exc / E+ £249 - £329

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M-E Anthracite Body Only.....	E++ £2,349
M6 Platinum + 50mm F1.4.....	Mint £6,379
M6 Titanium + 35mm F1.4 asph 6bit.....	E++ £3,489
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M7 0.72x Black Body + M Motordrive.....	E+ £1,499
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21mm F2.8 M Black 6bit	E++ £1,099
21mm F3.4 M Black 6bit	E++ £1,689
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21mm F4 Chrome + Finder	E+ £1,099
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50mm F2 M Black 6bit	E+ £949
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90mm F4 C Elmar	E++ £199
90mm F4 Collapsible	As Seen / E+ £139 - £179
90mm F4 Collapsible	E+ £249
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105mm F2.8 AFS G VR Micro	E+ / Mint- £439 - £549
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Zeiss 50mm F1.4 Milvus ZF.2	Mint- £749
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TC-17 EII Converter	E+ £179
TC-20E Converter	E++ £119 - £129
TC-20EII Converter	E+ / E++ £159 - £179
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SB21B Ringflash	E++ / Mint- £99 - £179
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



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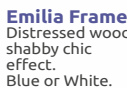
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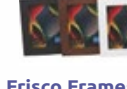
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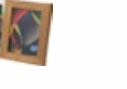
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No.301XL Colour 6ml	£22.99
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No.302XL Black 8ml	£21.99
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35mm T1.5 VDSLR II	£399
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Big Cats at WHF, Smarden in Kent

£155

April 29th, May 13th; Up close to African Lions, Bengal + Siberian + Sumatran Tigers, Servals, Cheetahs, Pumas, Jungle Cat, Amur & Snow Leopards, Caracal, Lynx, Clouded Leopards, Fishing Cat. Large open photographer-friendly enclosures. UK's most popular photo workshop. Really special photo opportunities from just inches away. White Lion pride in a huge natural enclosure. Max 12 clients.

Big Cats at WHF, Smarden, Kent - Specialist event 6 photographers - incl. Jaguars

£199

May 11th, 14th, 26th; Full day as above, but with additional space at each enclosure. Time is also put aside to review your photos at lunchtime. One to one tuition throughout this very special day. You will see all the animals as above and you will have more personal interaction with the cats. Now including Jaguars.

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Birds of Prey Workshop, Bedford

£119

April 15th, 16th; Private flying displays on pre-determined flightpath helps you to focus on birds in flight. Excellent opportunities with carefully chosen backgrounds. Also static shots in outstanding natural locations. Jesses carefully hidden. This location boasts one of the largest collections of Birds of Prey in the UK. White tailed Sea Eagle, Bald Eagles, Hawks, Owls, Falcons, Kestrels, Buzzards and Long Eared Owl (new).

Foxes, Otters, Wildcats, Badgers & more, Surrey.

£159

July 11, 12th; Inside enclosures 'til sunset. Also Owls, Snakes, Badgers, Polecats, Weasels, Stoats, Hedgehog, Harvest Mice & various Deer. 2 sessions with the foxes, sometimes only inches away from you. inside enclosures with Foxes, Otters, Scottish Wildcats. Badgers GUARANTEED. No fences or wires to shoot through.

Small Cats Workshop, Welwyn, Herts.

£109

April 24th; Privileged access to Snow Leopards, Amur Leopards, Pumas, Caracal, Leopard Cat, Lynx, Servals, Golden Cat, Jaguarundi, Cheetahs, Asian Wildcat. As featured on Animal Planet. Small groups.

Bass Rock Gannets

£225

June 9th, June 18th, June 25th; Private boat. Exclusive use of island for just 10 photographers. 50,000 pairs of nesting gannets on one small island. 4.5 hours photography. Amazing close-ups & fantastic flight shots. Large crate of fish fed to gannets as they dive into the sea. An amazing sight that you will never forget.

Gannets diving off Bass Rock

£99

June 14th; Fantastic new workshop. We sail round Bass Rock without landing on the island. A whole hour of throwing fish into the sea for the Gannets to catch. Amazing diving shots. 1,000 + dives. Tips & Tuition.

Farne Islands Puffins (Over 5 hrs photography)

£89

June 10th, 17th, 24th; 20 species of birds. 50,000 puffins. Guillemots, Razorbills, Shag, Arctic Tern colony etc. You will get unbelievably close to some of the species. Get that much sought after shot of Puffins with their beaks crammed full of sand eels. Tips and Tuition. Approximately 5 hours photography.

Pro Birds of Prey Shoot (2) with Short Eared Owl, Northumberland.

£139

June 13th, 16th; Both the falconer and the birds are different to workshop above. Venues are about 20 miles apart. We will take two of the birds down to an amazingly beautiful, little known waterfall. This will provide a unique backdrop for your subjects. The falls are surrounded by trees covered with mosses and lichens. We will photograph up to 10 different species of birds, mainly British. Maximum 8 photographers.

Small Mammals, Insects & Reptiles in BOTH RUTLAND & NORTHUMBERLAND

£199

Rutland March 15th. Northumberland July 27th, 28th; Indoor studio set-ups ensuring professional quality photos of stunning subjects. Studio lighting set up for you. Triggers to fit your camera supplied. Cameras and lenses can be loaned without charge. Innovative set-ups to maximise your opportunities. Max 4 persons. Harvest Mice, Red Eyed Tree Frogs, Praying Mantis, Bearded Dragon, Scorpion, Tarantula, Snakes, Lizards etc.

Birds of Prey on Lindisfarne (Holy Island) incl. Short Eared Owl

£139

June 5th; New workshop for 2016. Photograph a Short Eared Owl in its natural habitat before continuing with selection from Eagle Owl, Long Eared Owl, Barn Owl, Buzzard, Kestrel, Little Owl, Tawny Owl using boats, Lindisfarne Castle, boat houses & fishing props as backdrops.

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South Africa Wild Dogs and Reflection Pools - Botswana by Boat

Alaska's Inside Passage - Namibia's Wildlife, Landscapes & the Himba Tribe



For more information, please visit the website or call John Wright on 01664 474040 or 07779 648850 (preferred). We will be most happy to discuss any workshop in detail, or to send more detailed leaflets to anyone without internet access. Photographers on Safari, West End Studios, 55 Stapleford Road, Whissendine, Oakham, Rutland. LE15 7HF



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Final Analysis

Roger Hicks considers...

'New York Foundling Hospital', 1943, by Nina Leen

When does a picture become history? As soon as it is taken, of course, but some pictures are more immediately historical than others, regardless of precisely when they were taken. Nina Leen (1909-1995) shot this in 1943 at the New York Foundling Hospital.

A nun, a Sister of Charity, carries a new arrival. The mood is Victorian, but after all, the Queen-Empress had died little more than four decades earlier. Everything in the picture is, or could be, from the 19th century: the building, the decor, the lighting, the nun's habit. The very language has changed since 1943: the word 'foundling' has all but disappeared. So have social mores. Religion plays a far smaller part in most people's lives than it once did, though as late as 1965 a friend was confined in an isolation ward in the US because she had the communicable disease of 'giving birth out of wedlock'.

The power of monochrome

Monochrome adds to the vintage appearance, but artistically it is effectively essential. Whether we care to admit it or not, the strong contrasts of light and dark symbolise life and death, good and evil, joy and sorrow, the light of religion. Also, perhaps, misery, hypocrisy and deceit: joy and sorrow again. Who was that child's mother? Why did she give her baby up so starkly, not even for adoption, but abandoned? Photography can do more than show us what was in front of the camera. It can capture a mood, even an era. That baby could have grown up to become a hippie: subtract 1943 from 1967. What changed in those 24 years? What didn't?

Black & white is also technically essential for its ability to capture a far greater tonal range than colour – or, at least, to capture it more convincingly. Imagine this in colour, either with highlights blown and shadows blocked or with the curiously unreal hyperreality of HDR. It would be possible to take such a picture, but it could never have the same mood as this.

It also makes a very important artistic or perhaps merely practical point that many photographers miss. Sometimes



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you need to move about to take pictures, to get different angles, different viewpoints. That's the way movies normally show things, after all – think of *Blow Up*. But many of the greatest pictures by the greatest photographers were taken in another way altogether. They chose a spot that made a good

background, where everything was in place except the person who would be the focal point. Then they waited until the right person walked into the right place. Henri Cartier-Bresson did it with his famous puddle-jumper. Willy Ronis and Robert Doisneau did it all the time. Nina Leen almost certainly did it here.

AP

Roger Hicks has been writing about photography since 1981 and has published more than three dozen books on the subject, many in partnership with his wife Frances Schultz (visit his new website at www.rogerandfrances.eu). Every week in this column Roger deconstructs a classic or contemporary photograph. **Next week he considers an image by Larry Burrows**



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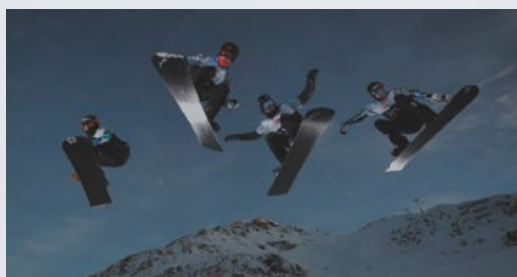
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