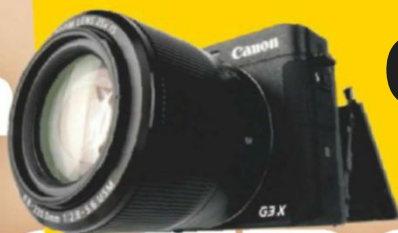


Saturday 15 August 2015

Amateur Photographer



Canon G3 X
With a one-inch sensor and 25x zoom,
this is the perfect carry-around camera?

Passionate about photography since 1884

Sony

RX100 IV

A great compact
gets even better



Into the light

Jeremy Walker shows how to shoot
dramatic contre-jour landscapes



Follow the
swallow

David Tipling on
photographing
his favourite bird

Digital Armageddon Why your photo archive could be lost to future generations

D750



24³
MEGAPIXEL

51
FOCUS
POINTS

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I AM A FULL FRAME FREEDOM

I AM THE NEW NIKON D750. Clark Little captures waves like nobody else. But as one of the world's most passionate photographers, he keeps challenging himself. That's why he's excited to free his vision even more with the fast, versatile and agile Nikon D750. Packed with professional imaging technology and streamlined for compactness, nothing holds this camera back. The newly designed FX-format sensor delivers exceptional image quality with cleaner results than ever before at high ISOs. Phenomenally sensitive AF performance and a burst rate up to 6.5 fps enable full freedom of expression. Search for outstanding images yourself and discover how you can make a difference with the new D750.



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COVER PICTURE © JEREMY WALKER

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I recorded my eldest son's early years on film, and have boxes full of prints of him. By the time his brother came along I'd switched to digital, and most of his early photos are on hard drives. Can I be confident that both my kids will be able to see their pictures when they're my age? Until recently, I thought the answer was yes – I have a Drobo storage solution that stores my 2TB's worth of images on multiple

hard drives. But then the drives started failing. 'They don't last for ever, you know,' I was reminded – and then it was pointed out to me that my five-year-old Drobo was itself getting on a bit. I'm now having to rethink my entire archiving strategy. I know there are millions of others like me, and perhaps you're even one of them yourself. If so, do take a look at our *Digital Armageddon* feature on pages 22-27.

Nigel Atherton, Editor

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ONLINE PICTURE OF THE WEEK

Wast Water, Wasdale

by Ben Wayman

Nikon D60, 18-55mm, 50secs at f/5.6, ISO 100

Knowing how best to arrange the chaotic elements of a scene in order to create an engaging composition is an important skill.

However, in this shot by AP forum user Ben Wayman, we see the other end of the scale: making the best use of empty space. The bank of mist on the horizon really helps to pare the scene down, and by shooting from this angle Ben has ensured that the trees on the left and right act as strong compositional and visual anchors.

IMAGES MAY BE USED FOR PROMOTION PURPOSES ONLINE AND ON SOCIAL MEDIA

© BEN WAYMAN



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Via our online communities Post your pictures into our Flickr group, Facebook page 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 20.

NEWS ROUND-UP

The week in brief, edited by Chris Cheesman



Vivian Maier show
Photographs by US nanny Vivian Maier, who created an archive of 100,000 negatives and undeveloped rolls of film but died before achieving fame, have gone on show in London. Maier's ascent from recluse to revered artist is phenomenal, explains the Beetles+Huxley gallery, which is hosting the exhibition until 5 September. Visit www.beetlesandhuxley.com.

Kenko converters

Kenko has launched two teleconverters, initially available in Canon fit. Compatible with Canon EF and EF-S lenses, the Teleplus HD DGX 1.4x and Teleplus HD DGX 2x teleconverters cost £219 and £279.99 respect



Red Cross challenge
Canon DSLR prizes are up for grabs in the British Red Cross competition for photographers aged 25 and under. Organisers say the event celebrates the 'extraordinary contributions' young people make to the lives of others. The closing date is 20 September 2015. For details visit www.redcross.org.uk/theaward.

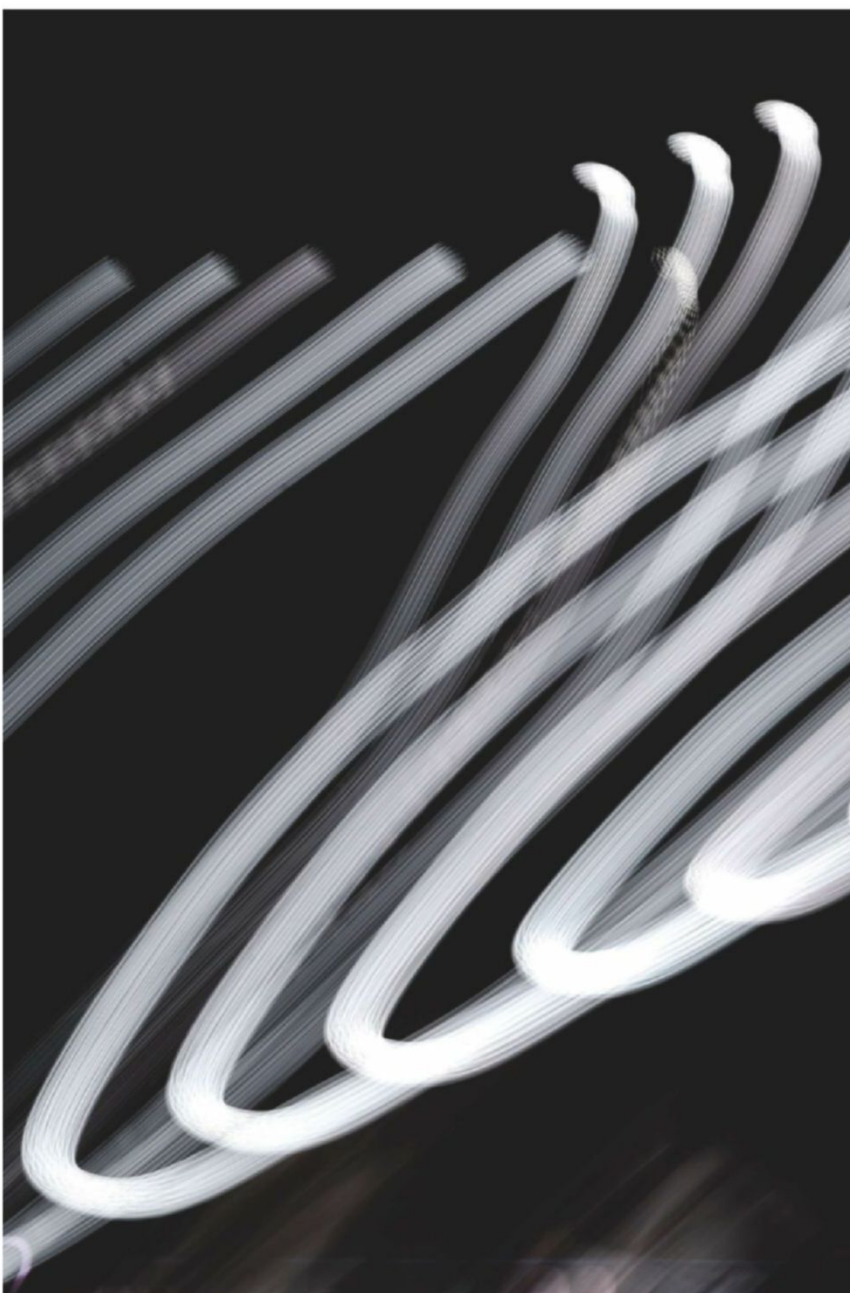
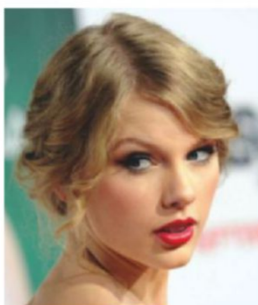
CSC video on rise

Videographers favour compact system cameras, such as the Fujifilm X-T10 pictured below, over DSLRs when shooting movies, says market analyst Futuresource Consulting. European shipments of DSLRs for professional video use fell 41% in 2014 as more videographers turn to compact system cameras.



Rights victory

Singer Taylor Swift (pictured) has issued a revised contract for photographers after complaints about previous ones. Last month, *The Irish Times* refused to publish photos of Swift because her contract demanded 'perpetual, worldwide right to use the published photographs in any way she sees fit'.



WEEKEND PROJECT

Notting Hill Carnival

'The Notting Hill Carnival has become an institution,' says travel photographer Craig Roberts. 'First held in 1964 as an offshoot of the Trinidad Carnival, it's now the largest street festival in Europe. Held yearly on the August Bank Holiday (this year on 29-31 August), it has become a spectacle of costumes, colour, music, Caribbean food, extravagance and sheer entertainment that rivals the carnivals that take place in Brazil, with more than one million people attending over the weekend. You can expect to see some 50,000 performers, so for the best viewpoints, take the Tube to Kensal Green station and walk down to Ladbroke Grove. This is where the floats meet to start the procession and it allows you more access than later on the route. Have fun, enjoy the (loud!) music and above all, take plenty of pictures!'

1 You want to keep your kit small, light and inconspicuous, so take a DSLR or mirrorless camera with wide-to-standard zoom. This will allow you to get in nice and close to the dancers and other participants.

2 You'll find that the participants are more than willing to have their picture taken and will often pose especially for you. You'll find plenty of other photographers here doing the same thing, so you won't be the only one doing this.

BIG picture

Japan takes a gold medal in the 2015 World Fencing Championships

◀ Many of us have little or no exposure to the sport of fencing. This is unfortunate, because the skill involved in this most demanding of activities is an astonishing feat. It also happens to be a sport that, as we can see here in this shot by Kirill Kudryavtsev, lends itself perfectly to exciting and dramatic images. Here we see a long-exposure shot showing Japan's Yuki Ota (left) vying with the USA's Alexander Massialas (right) during the men's individual foil final event at the 2015 World Fencing Championships in July. The spectacle took place in Moscow, Russia, and saw Ota take a gold medal. Ota's career is clearly on the up, as he also took a silver medal in the team foil at London 2012 Olympic Games and an individual silver at the Beijing 2008 Olympic Games.

Words & numbers

Only photograph what you love

Tim Walker

British fashion photographer
b1970

10,700

Images entered into the Hasselblad Masters 2016, by more than 4,000 photographers

SOURCE: HASSELBLAD



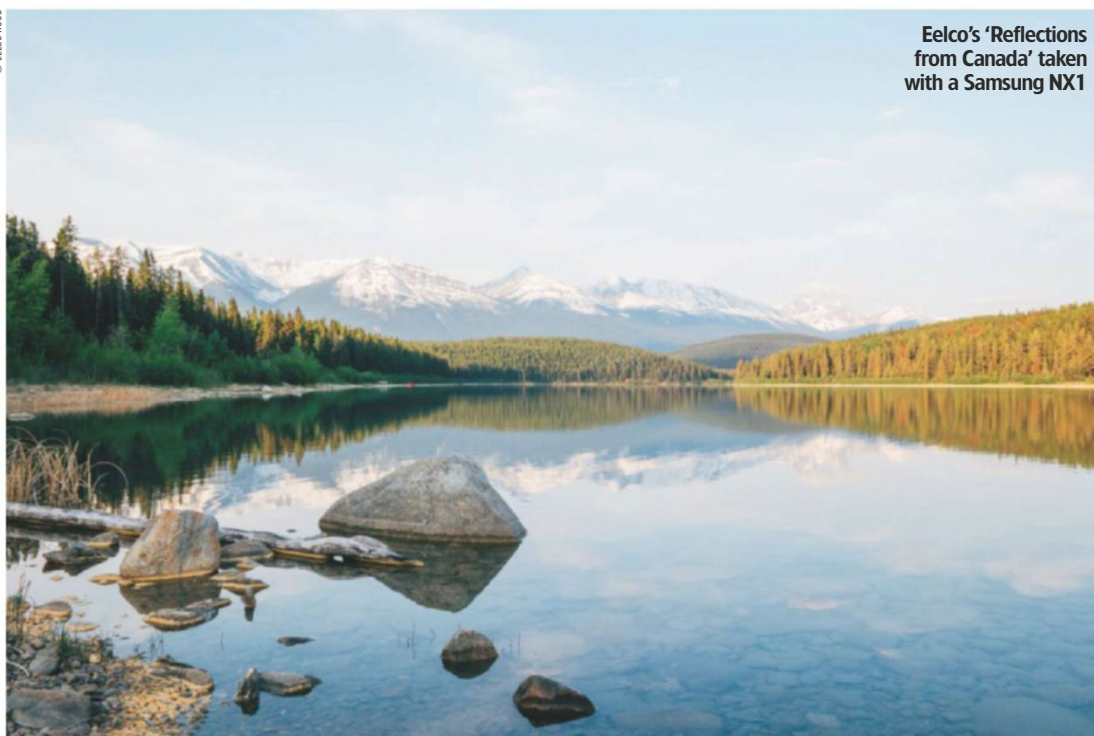
3 A flashgun is useful to add a splash of fill-in light on overcast days (it is a bank holiday!), or even if it's sunny, to fill in the shadows on people's faces. It will also make their colourful costumes all the more vibrant.

Many of the carnival's participants will happily pose for pictures

4 Use a wide aperture to help isolate your subject, while a telephoto lens will be useful to isolate individuals, as well as allowing you to crop in nice and tight when you can't get close enough, or if shooting from one side of the street to the other.

© CHRIS ROBERTS





Eelco's 'Reflections from Canada' taken with a Samsung NX1



Canon shows '4 million' ISO video camera

CANON has launched a compact 'multi-purpose' professional video camera, built for 'extremely low light' with a top ISO of more than 4 million.

The Canon ME20F-SH is designed for filming wildlife at night, surveillance or astronomy, for example.

Its full-frame 2.26MP CMOS imaging sensor dispenses with the need for infrared illumination, so shooting in colour with reduced noise is possible even in low light, says Canon.

Canon added: 'The ability to install the camera in a semi-permanent location, with remote-control operability, also means that for documentary and natural-history filmmakers, long-term projects and events can be captured with minimum staffing.'

Prices and availability are yet to be confirmed, with Canon to release a list of compatible lenses soon.

Enthusiast quits job to become Instagram star

A SELF-TAUGHT Dutch photographer who left his job in IT after more than a decade has become one of the biggest hits on Instagram, gaining nearly half a million followers.

Eelco Roos, who has been a passionate photographer since he was 16, quit his job at IBM in Amsterdam, the Netherlands, in April 2014, aged just 39.

Ditching a stable job after more than 10 years would count as a scary prospect for anyone, and Eelco was no exception.

'I had some sleepless nights thinking about quitting and what that would mean for me and my family, for sure,' he told AP.

'The decision was not made lightly. I am the proud father of two boys, and my girlfriend and I have a mortgage, so there are loads of responsibilities.

'After a lot of discussions with my girlfriend, she eventually gave me the confidence to follow my heart and chase the dream.'

Before leaving IBM, Eelco had squeezed in some part-time commercial photography work. But juggling this with a nine-to-five job was 'far from ideal'.



Eelco Roos gained 454,000 Instagram followers with his typically Dutch photos

He added: 'It got to a point where I had to buy vacation time to be able to travel for commissions. This was pretty stressful on my family – a nine-to-five [job], plus a lot of travel for my photography.'

So, what's Eelco's secret to attracting such a vast number of Instagram followers – 454,000 at the last count?

'I think I was lucky to be one of the first to embrace the [Instagram] app in the Netherlands. Because the

Instagram audience was predominantly American in the early days, I guess my typical Dutch photos of cows and cyclists stood out, which definitely helped me grow in the beginning.

'After a good year or so, Instagram noticed my feed and added me to their suggested user list, which made me grow insanely fast.'

For Instagram newcomers, Eelco advises using popular hashtags because this is 'usually a good way to get your work out there for others to see'.

He continued: 'For anyone contemplating a similar move, if you feel you have a future in your hobby's field, go for it!'

'Make a plan on how you want to reach certain goals and then work for it, hard...

'I came to the conclusion that I'd rather take a chance, jump in head-first and fail miserably than regret not even trying.'

Eelco's kit includes a Canon EOS 5D Mark III for commercial work, while for Instagram, he mainly uses an iPhone.

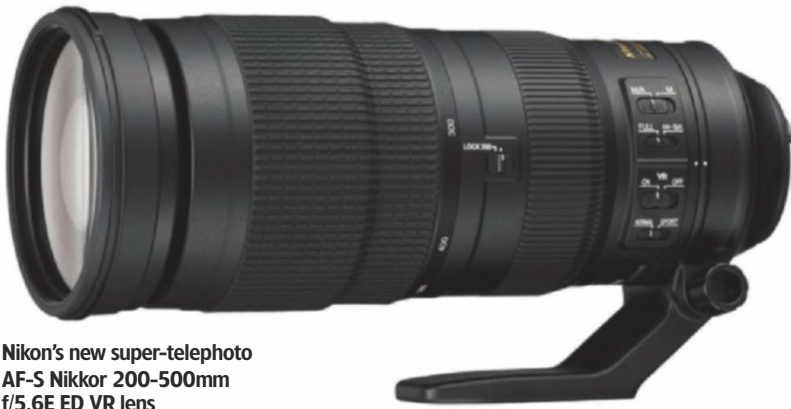
To view Eelco's work visit www.croyable.com. You can also follow him on Twitter @eelcoroos.



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Nikon's new super-telephoto
AF-S Nikkor 200-500mm
f/5.6E ED VR lens

Nikon unveils three new lenses

NIKON has launched three new lenses, including the AF-S Nikkor 24mm f/1.8G ED, priced £629.99.

The new 24mm f/1.8 prime lens is built to deliver 'exceptional image quality and low-light performance', and adds a 'cinematic feel' to movies.

It is also compact and lightweight, so is ideal for travel photographers, adds Nikon.

The FX-format newcomer boasts a

23cm. On a DX-format DSLR its equivalent focal length is 36mm.

Nikon is also set to release a new super-telephoto, the AF-S Nikkor 200-500mm f/5.6E ED VR. This FX-format zoom is aimed at photographers shooting birds in flight, planes and sports.

Priced £1,179.99, the 19-elements-in-12-groups 200-500mm f/5.6 lens features Nikon's Sport VR mode, which is designed to deliver a stable

Launch dates for the 24mm and 200-500mm have yet to be announced.

Finally, Nikon has overhauled the most widely used zoom lens in its professional line-up: the AF-S Nikkor 24-70mm f/2.8E ED VR.

Nikon claims the new 24-70mm f/2.8 lens is faster, stronger and steadier, thanks to its VR technology, and new optical construction

The 24-70mm f/2.8E ED VR is out on 27



The new AF-S Nikkor 24mm f/1.8G ED (left) and 24-70mm f/2.8E ED VR (right)

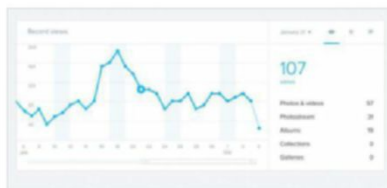
Flickr relaunches Flickr Pro

FLICKR owner Yahoo has rolled out what it says is an improved version of Flickr Pro to new and existing members, at a price of £32 per year.

Benefits include improved navigation and statistics when viewing photos, which is aimed at helping users discover which images 'hit the mark with their friends'.

For new members, Flickr Pro costs £4 per month or £32 per year. The original Flickr Pro was discontinued for new users in May 2013.

The storage limit for both the free and Pro accounts is one terabyte.



Flickr Pro will give users better access to the viewing statistics of their images

Flickr states that existing Pro members will be automatically upgraded.

For details, members can visit www.flickr.com/account/upgrade.

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 Jon Stapley



Dog Photographer of the Year competition

Dog Photographer of the Year is back! Time to snap some lovely portraits of our canine pals. There are a few different categories to try out, so shop around and try your luck.

Until 13 March 2016, www.dogphotographeroftheyear.org.uk



EDINBURGH



SEA AND COAST

Collecting Now

The Scottish National Portrait Gallery has acquired a selection of images from 20th century photographer Paul Strand, and will have them on display among its Collecting Now exhibition.

Until 20 September, www.nationalgalleries.org

Out of the Blue

Enter this new ocean-focused photography competition, launched by the Prince of Wales, and you could stand a chance of winning £5,000. You've only got a couple of weeks, so get shooting.

Until 6 September, www.outofthebluecompetition.com



CORNWALL

Eden Project competition

You can win an Asus laptop with this competition by the Eden Project, the world's largest indoor rainforest. Snap your best shot of some of the beautiful exotic plants on show, and post it on Twitter with the tag #edenphotocomp.

Until 29 September, www.edenproject.com

Take a landscape weekend

Why not give your photography the treat it deserves by planning a weekend away to reconnect and take some great pictures? Our technique editor has put together a great guide on making the most of a weekend landscape shoot, which you can read at the link below.

www.amateurphotographer.co.uk/weekend



EVERYWHERE



wpoint Lars Rehm

not boast image stabilisation, but the
e is the first smart lens I actually want
use. Here's why...

Not long ago I wrote in this magazine that smart lenses that connect to your smartphone, such as the Sony QX series, the Kodak SL models or the Olympus Air, were a solution looking for a problem. Considering there's no screen and only very few controls, relatively large dimensions and Wi-Fi-induced lag, they simply couldn't rival similarly specified compact cameras.

However, a smart lens has finally been launched that I am very much looking forward to using and testing. And perhaps it's no coincidence that the most innovative approach yet in this product segment hails from a company not known for its hardware. French software maker DxO Labs is best known for its raw image converter and as a provider of image-processing solutions to camera and mobile device manufacturers, but its first image-capturing device, the DxO One, already looks like a winner to me.

So why is the One better than the other models mentioned above? There are several reasons, but the most obvious is its physical connection to the smartphone. All models we've seen until now use a Wi-Fi connection to communicate with the smartphone. In contrast, the DxO One uses the Apple iPhone's physical Lightning connector. This solution not only eliminates the annoying lag we've seen on the Wi-Fi models, but also effectively turns your iPhone into a premium compact camera with a useful swivel

'The DxO One has fitted a 20.2MP, 1in sensor and six-element f/1.8 lens into a very small package'

screen that has some resemblance to early digital cameras such as the Nikon Coolpix P900 or the Casio QV-R300.

Thanks to clever lens design and software correction, DxO has also managed to fit a 20.2-million-pixel, 1in sensor and six-element f/1.8 lens with a 32mm equivalent focal length into a very small package. The One is still not small enough to carry anywhere at any time, but remains smaller than competing devices with a similarly large sensor. Add raw capability and an intuitively designed camera app with full PASM modes into the mix and you have a powerful pocket-sized imaging tool.

Unfortunately, there's no optical image stabilisation and when in video mode, due to digital stabilisation, the focal length changes to 44mm equivalent. So the DxO One might not be perfect, but it definitely takes us one step closer to combining the image-capturing power of a premium compact camera with the iPhone's connectivity and ability to run apps. Hopefully, the established camera manufacturers will have a close look at the DxO model's innovative concepts, too, and smart lenses could become much better in the near future.



Lars Rehm is a freelance photographer and writer, contributing to publications in the US, UK and Germany. In his former role as part of DPRview's testing team, he shot with countless digital cameras of all shapes and sizes, but nowadays he captures most of his images with a smartphone. Visit www.larsrehm.com or follow him on Twitter @larsrehm

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 20 and win a year's digital subscription to AP, worth £79.99

New Books

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



Schude

by Ryan Schude, Roads Publishing, £40, hardback, 192 pages, ISBN 978-1-90939-962-4

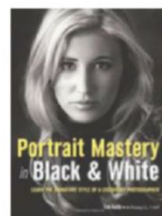


LA-BASED photographer Ryan Schude is not known for his moderation. If you will, imagine Gregory Crewdson with attention deficit disorder and that should give you a fair idea of what to expect from

Schude's prismatic and serried tableaux. That's not a criticism by any means. Schude's work is riotous in its extravagance, and is a beautiful exploration of pop Americana. Each image is exquisitely crafted. The images work almost in much the same manner as in which a magic-eye picture would reveal itself: the more you stare at Schude's images, the more of the picture is revealed. This is Schude's first book, and while the image reproduction quality leaves a little to be desired, it's a fitting tribute to a man who works every detail to his utmost satisfaction. ★★★★★

Portrait Mastery in Black & White

by Tim Kelly, Amherst Media, £24.99, paperback, 128 pages, ISBN 978-1-60895-843-6



BOOKS by Amherst Media can vary wildly in quality (their range of books detailing 500 poses for models was a notable head-scratcher). However, once in a while the company produces a book or two that's more than worth looking into, and this is one of those titles. It may be a little of an embellishment to refer to photographer Tim Kelly as legendary (as it does on the cover), but looking through Kelly's images places you in no doubt that this is a practitioner who understands his craft. There are plenty of books like this on the market – ones in which we are presented with an image and a diagram of how it was lit – but rarely are the images themselves so engaging. With that in mind, this is definitely one of the better titles of its nature on the market. ★★★★★

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photo: Jasmine Dalmeny

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Light shades

Jeremy Walker shows how the contre-jour technique can breathe new life into your landscapes



I was in my early teens when I first became interested in photography and probably 15 when I bought my first SLR. As a keen youngster I was enthusiastic and grateful for all the advice I could get, yet as a novice I was also very impressionable.

One of the first pieces of advice I was given was: 'Don't shoot into the light – always have the sun over your left shoulder.' At the time I was young and naïve, and it seemed like good advice – but it wasn't. In landscape photography you will often be looking for cross lighting to

bring out the texture and character of the countryside. This is fine, but I would also advise trying your hand at contre-jour, or to put it more simply, shooting into the light. This technique creates a striking backlight behind your subject and will help to emphasise lines, shapes and silhouettes.

As with any photographic technique there are certain factors to consider, the first and foremost of which is health and safety. No, you don't need a high-visibility jacket and hard hat to shoot into the light, but you should avoid

Shooting into the light can transform flat, formless landscapes into something much more striking

looking into the sun with a medium-to-long lens for any prolonged period of time, since this can damage your eyesight.

So, do you need any particular or specialist camera kit to shoot into the light? Well, yes and no. You only need a camera and anything from a wide-to-long lens, depending on your subject matter. Quality lenses are a must, as you will often be pointing your lens straight into the sun, or at least the main and brightest light source. Flare and ghosting (non-image forming light) will be your enemy, so modern



KIT LIST

Quality lenses

The better the lens quality, the less chance of flare or ghosting. The latest lenses with anti-reflective coatings should therefore be the optics of choice.



Prime lenses

With less complicated element groupings than zoom lenses, there will be less chance of image degradation from flare.





Jeremy Walker

Jeremy Walker is an award-winning professional photographer and Nikon Ambassador. He has many years' experience specialising in high-quality landscape and location photography for corporate clients who appreciate his meticulous approach and far-reaching vision. www.jeremywalker.co.uk

lenses designed for the digital era with flare-resistant coatings, such as Nikon's Nano Crystal Coating, will certainly help with image quality. Using prime lenses rather than zooms will also help reduce the chance of flare, because the optical construction tends to be less complicated with fewer or simpler groupings of elements. From a purely aesthetic point of view, lenses with a nine-bladed diaphragm seem to create a better, cleaner, sharper 'ping' or starburst when shooting into the sun, which can be a useful effect. The more you stop down, the

better the 'ping', but be aware of diffraction at smaller apertures.

Metering

Contre-jour can be a tricky technique to meter and master, and takes some practice, but the results can be well worth the effort and are highly rewarding.

Try taking light readings with a multi-pattern metering mode like Nikon's Matrix metering, rather than spot metering, as it will be a little more forgiving. The real key is to meter with the sun or main light source not directly in the



A 'Hoodman' or loupe

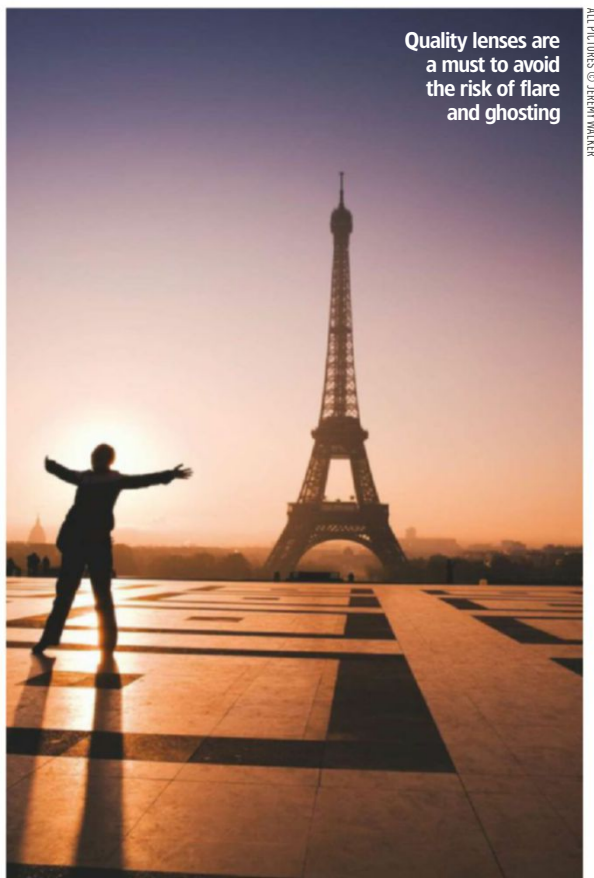
If you are spending much time shooting and looking into the light, your eyes will find it difficult to adjust to the small screen when you check the images on your monitor. Use a loupe with a magnifier that covers the whole screen to see more detail.



ND graduated filters

These hard or soft-edged grads are used for holding back the exposure of the sky and balancing it with the foreground, or for darkening a sky for added mood and atmosphere.

Quality lenses are a must to avoid the risk of flare and ghosting



ALL PICTURES © JEREMY WALKER

Technique INTO THE LIGHT

➤ field of view, in order to retain detail in the subject matter.

Simply compose your image and then turn the camera away, so the sun or main light source is just outside the main field of view. Then meter, recompose and shoot, and you should then only need to apply minor adjustments – if any. Of course, this is much easier if you are using a tripod and I strongly recommend that you do. If you are aiming for a pure silhouette and do not want detail in the shadows, meter for the brightest part of the scene.

With modern DSLRs having such a huge dynamic range and the ability to retain shadow and highlight detail, even in extreme conditions, you will soon be able to get the hang of what type of subject, light or effect does and does not work. When shooting into the light you have to consider the subject matter as well as the technique. Landscapes, architecture or even

people shots can be successful, provided the combination of subject, light and composition work together. The most important of these (as with many subjects) is the light: its quality, colour, strength and direction.

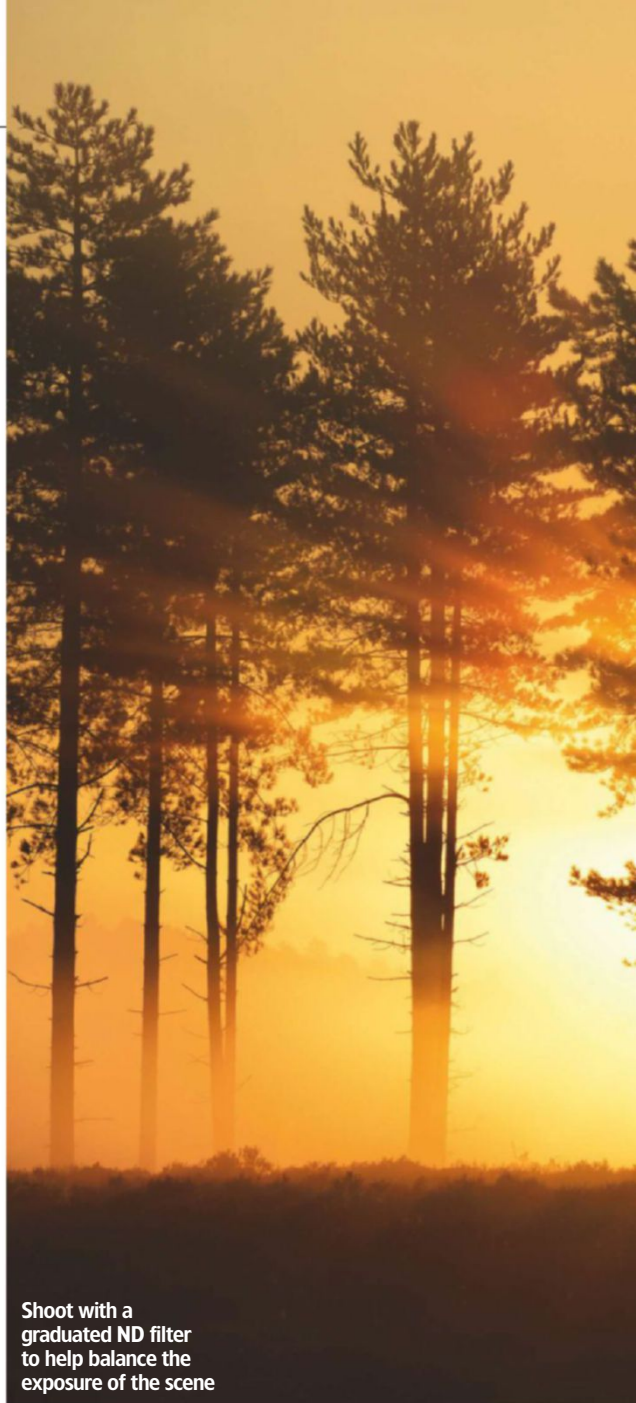
When talking about shooting ‘into the light’, it is very easy to imagine shots backlit by bright contrasty sunshine that cast long shadows. Certainly, this kind of strong directional light can be moody and dramatic, but soft sunlight through mist, fog or clouds should not be dismissed.

Techniques to try

If you are photographing a landscape, there are two main techniques to try when shooting into the light. The first is to shoot pre-sunrise or post-sunset when the sun is below the horizon and the light can be soft and colourful with little contrast, especially ➤



Look for strong shapes and outlines when shooting into the sun



Shoot with a graduated ND filter to help balance the exposure of the scene





Modern DSLRs have such a huge dynamic range that you can easily retain detail



Try this

USING a neutral density graduated filter is common practice for balancing the exposure from foreground to sky, especially in a big landscape. If you are shooting directly into the sun there is no reason why the same technique will not work. Meter for the foreground and then use the grad to balance the sky. However, if you

are shooting into the light you will often find that instead of a 2 or 3-stop grad, you will be combining filters and shooting with up to 5 stops of graduation. The only downside to this technique is that you may find the upper corners of your image becoming a little too dark.



One that didn't work... or did it?

SHOOTING into the light can be tricky, with metering, composition and flare all causing problems. Flare can be an issue, especially if you shoot straight into the sun, and it is usually something to avoid. Sometimes, however, flare can add interest to an image. While shooting in Death Valley in the USA (above), I managed to get flare across the image from the rising sun. I didn't know at the time as I was using a panoramic camera and there was no way of reviewing the image as I was shooting. Ask yourself whether the flare intrudes into the picture, or does it add a sense of oppressive heat and mood to the shot?

➤ if there is a clear sky. Think of misty mornings, lakes or coastal images. In this lighting situation a neutral density graduated filter is advisable to help balance the exposure from foreground to sky.

The second technique, which is applicable at sunrise, sunset or even when the sun is getting quite high in the sky, is to try to hide the sun, or at least part of it, behind a structure, a tree or even a person. If you hide part of the sun you can shoot directly into it and minimise the risk of flare and get a perfect starburst effect. If shooting woodland, you will also backlight the leaves and still have an illuminated foreground.

The amount of shadow detail will depend on the density of the foliage. If you hide the sun just enough you can meter for this kind of scene with the sun still in the image,

without it affecting the end result. With a little trial and error this will help you achieve excellent results.

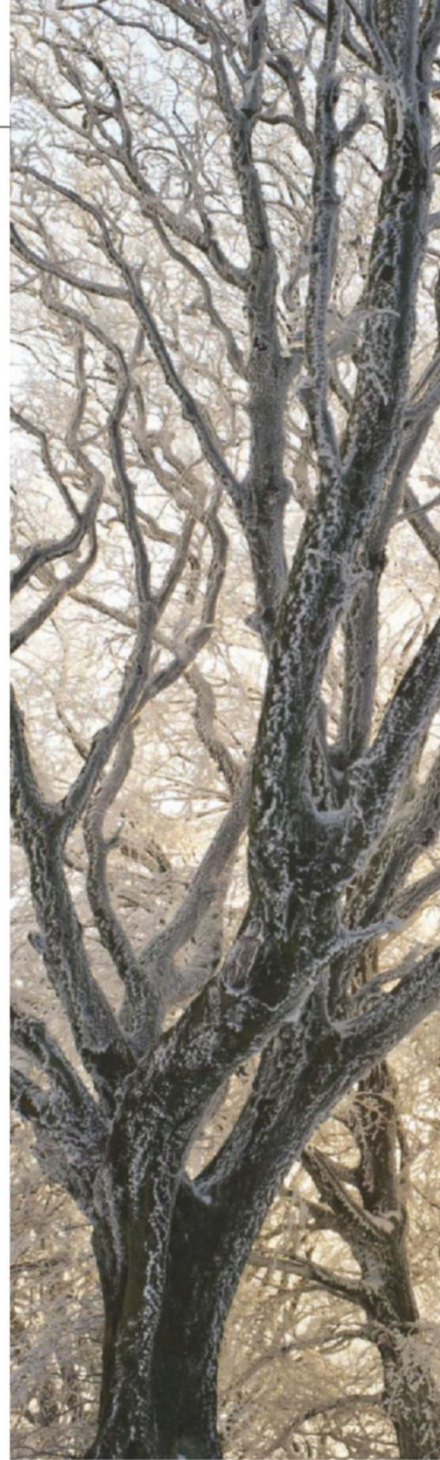
Another simple but useful technique for contre-jour is to use silhouettes to convey a strong sense of graphic shape and form. The sun can be either in the image or outside the main image area, but the technique is the same. You meter for the brightest part of the image, throwing everything else into shadow. Ideally, you should be interested in shape rather than detail. This can work well with buildings or subjects with strong shapes and lines that you can put against the sun, such as palm trees.

The next time you are out with your camera, occasionally look in the sun's direction for shadows, shapes, form and colour to see what might work by shooting into the light, but do it carefully.



Right: Try stopping down your lens to enhance the starburst effect from the sun

Far right: Use silhouettes to introduce a strong sense of shape and form to your shots



JEREMY'S TOP FIVE TIPS



Look for lines and shapes

Find strong, bold lines and shapes that convey a story. Meter for the highlights and let the shadows go really dark. If the sun isn't quite strong enough a little post-production prodding will help – increase the contrast and push the blacks slider along a little.



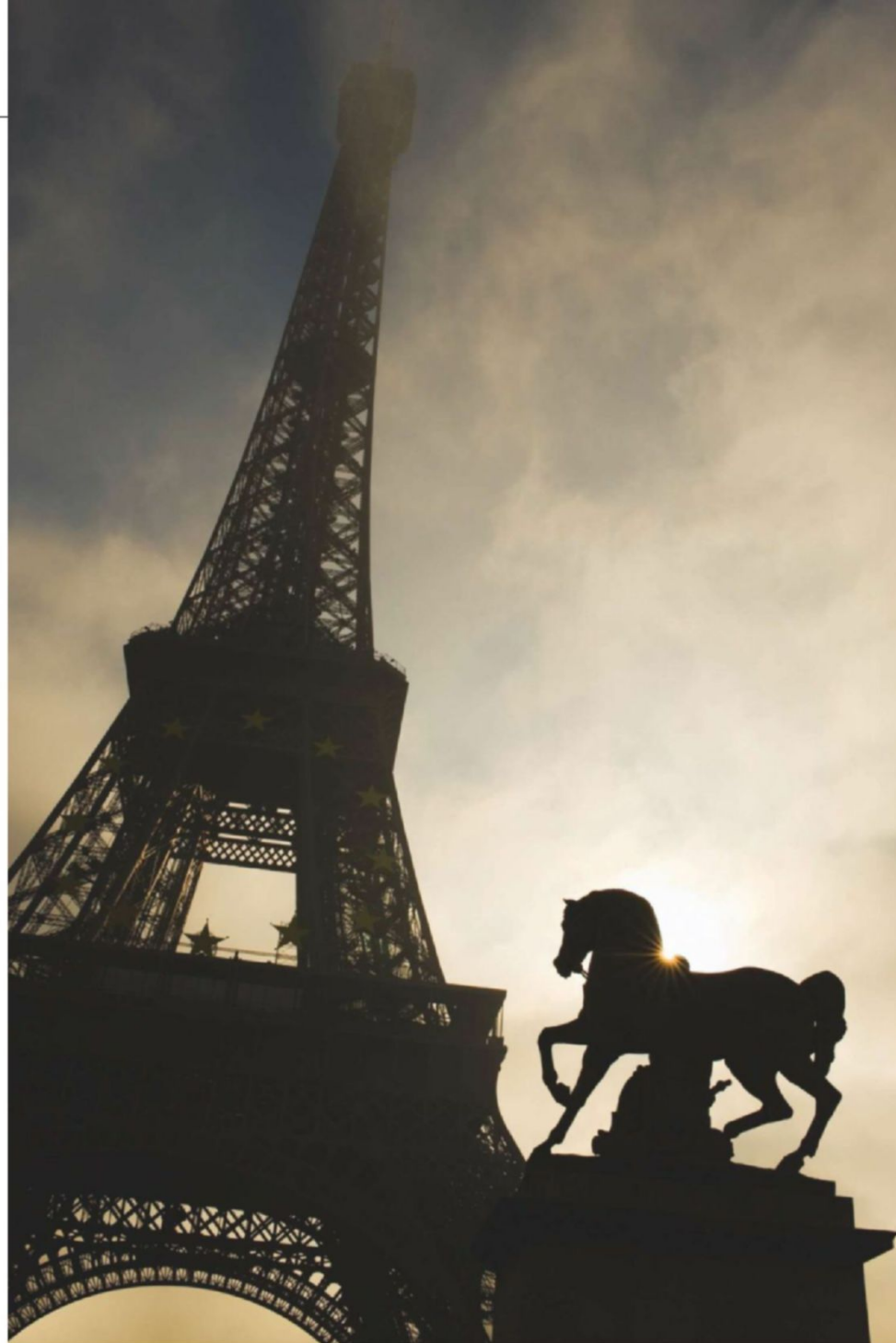
Shoot in the golden hour

Shoot into the light about 20 minutes before dawn or after the sun has set. These are optimum times when the light can be colourful but contrast is very low, revealing plenty of subtle detail. Choose the right conditions and your image will never be flat and dull.



Reduce flaring effects

Partially hide the sun behind your subject to reduce flare. By stopping down to f/11 and beyond you'll create a 'ping' or starburst (also with starburst software but a nine-bladed diaphragm prime lens produces better results). Note that stopping down increases diffraction.



High angles, high contrast

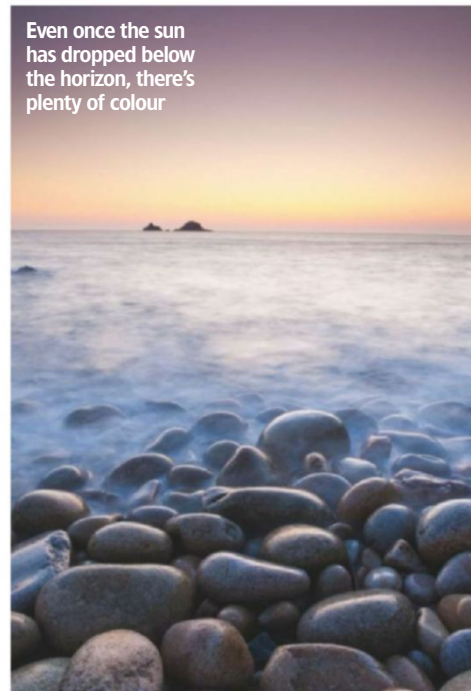
If you have a high-angle viewpoint down onto water and the sun is creating a strong highlight, meter for the highlight and even slightly underexpose it. The shadows and blacks will go really deep and dark to create a high-contrast monochrome effect.

Work with weather

Mist or fog will soften the effects of direct sunlight, or even hide the sun. Find a 'see-through' subject with simple shape and form, and use the mist. Meter for the brightest part of the image. Most modern cameras' dynamic range will create shadow detail anyway.



Even once the sun has dropped below the horizon, there's plenty of colour





Making the switch

Renowned photographer and lighting guru **Damien Lovegrove** explains why he gave up his DSLRs for **Fujifilm's X-series** cameras

In the digital era I've had Hasselblad and Phase One medium format kit along with DSLRs from Canon and Nikon, but it was about four years ago that I got a Fujifilm X100. I saw it at Photokina in this glass cabinet and it was so beautiful and so retro. I could tell straight away that it was going to be a machine that was lovely to use. I didn't need it, I desired it and decided to buy it. I kept bringing it out at shoots and it just transformed the way I worked. It felt totally natural, while the fixed lens meant I didn't have any decision-making to make.

I then added the X-Pro1 with 18mm, 35mm and 60mm lenses. Its first proper outing was my road trip covering the full length of Route 66. My finance director

(Julie, my wife) wouldn't let me put the X-Pro1 camera purchase through the business as it was not an absolutely necessary expense, saying "You have a perfectly good Canon camera kit already" so I paid for the Fujifilm X-Pro1 kit out of my own savings. It felt even more special for that.

The X-Pro1 was a joy to use and the images it gave me matched my Canon EOS 5D MkII for quality. I never picked up the Canon again and I eventually sold it once I had bought the 14mm f/2.8 prime to replace my Zeiss 21mm on the Canon system.

I'm now using the Fujifilm X-T1 for all my day to day shooting. There's lots to love about it but the flip-out screen on it is perfect for me. I like to shoot from the hip,

and use it like a waist-level viewfinder. It allows me to communicate with my without having this glass in front of my face.

All the Fujifilm amazingly sharp that's where I of the time. They rapidly gain in It's great at f/ portraits with controlled bokeh

The Fujifilm the system is image quality a joy to use. The photography has the kit I'm using more creative I've said goodbye to good.



For further information, and special offers and competitions visit www.amateurphotography.com



Damien's top portrait tips



DAMIEN LOVEGROVE PORTRAIT

Damien has forged a successful career as a high end wedding and portrait photographer

Make a connection: Connect with the person you're photographing. Put the camera aside, have a cup of tea, have a cup of coffee, have a laugh with them. Really get to know them and then bring the camera into the frame.

Perspective: The perspective in a portrait isn't related to what lens you've got on the front of the camera. A wide-angle is going to be the same as a telephoto in delivering perspective, but what matters is you relative to your subject. If you use a long telephoto lens, you'll find to get a mid-shot you'll have to shoot from quite a long way back. It's flattering, but you don't get that connection, that intimacy. You need to work at just beyond arms length to get something really really beautiful. I'm working with the 60mm, 35mm and 23mm and only go to the 56mm if I want something a little bit tighter.

Plan your style: Decide on the look you are aiming to achieve from the outset, such as high-key, rim lit or moody. Once



you know what you hope to achieve from the shoot and have a clear idea of the look you're after, it makes the rest of the process that much easier.

Review: Review each shot using the camera's screen. Does the picture have the look you want? Is the contrast right? What could make the shot better? Zoom in and check the detail. Is there enough shadow information? Is the shot sharp? Are the highlights clipped? Get it right in-camera.

The Fujifilm X-T1



X-Photographer
X-Perience

rapher.co.uk/fujifilm-x

These shots were taken by Damien during his workshop at the Fujifilm X-perience day at the AP offices. Attendees had the chance to shoot with a host of Fujifilm kit under the expert guidance of Damien and fellow X-Photographers Paul Sanders and Matt Hart. [If you'd like to attend future events, please email photo_events@timeinc.com](mailto:photo_events@timeinc.com)

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LETTER OF THE WEEK

Film flair

Articles in recent issues of AP have commented on using film to gain a fuller understanding of image control and creation.

After shooting on film for more than 35 years, including about 10 years of home darkroom processing and printing, I retired my film cameras and darkroom equipment and, moving with the times, switched entirely to digital photography.

However, perhaps as a nostalgia trip or as a simple challenge, I've recently returned to shooting 35mm and 120mm film and sent the exposed film to labs for processing before scanning and printing from the processed negatives.

Then the penny dropped – I can home-process film without needing a darkroom. I aim to process monochrome only, but colour processing is possible with the right chemicals and a well-controlled temperature regime.

After scanning my negatives I revert to conventional digital

processing (I use Adobe Photoshop Elements 11) and I take the processed digital images to a local digital service for printing, although I'm considering buying an inkjet (dye or pigment ink) printer suited to best-quality monochrome printing.

Take the plunge and give film a try. Even if you send the film off for processing (the wait for the film to return is in itself a nostalgia trip), you're never sure of success until you hold the processed negatives in your hand.

Graham Lockerbie, Australia

I had a similar epiphany a few years ago and regularly developed my black & white negatives at home, hung them to dry and was scanning them within a couple of hours of shooting. It doesn't quite have the immediacy of digital, but if you enjoy shooting film it's a good compromise and very straightforward to do – Richard Sibley, deputy editor



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Club hub

At the City of London and Cripplegate Photographic Society, we place great emphasis on being a photographic society rather than 'just' a camera club. Maybe this is partly because of the adverse press about camera clubs, as Harry Kitchen's letter (AP 25 July) demonstrates, and partly because of our long history, of which we are proud.

At our most recent Tuesday session, I canvassed new and nearly new members, to ask them whether they found us friendly, but really, I knew already from unsolicited comments that we are indeed a welcoming group. As we are located in central London, our membership comes in waves as people move in and out of the city, but we have some

people who have been members for decades and travel from afar. People who are interested in photography need more than magazines and online forums to flourish. Perhaps if there were more encouragement for clubs in the specialist press and organisations like the RPS, more people would benefit from the encouragement of other enthusiasts.

At CoL&CPS, we are so appreciative of the experts who freely give their time to visit and speak on their subject. We'd warmly welcome any interested AP readers.

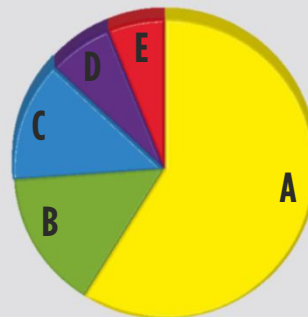
Jean Jameson, London

I was really interested, and not a little saddened, to read Harry Kitchen's letter regarding his encounter with camera clubs. Unfortunately, my story will

only serve to substantiate his experience.

On one of my first evenings at a local club there happened to be a prize-giving ceremony and a photograph was needed for the local paper. Up stepped some long-serving committee member with his newly purchased 'pro'-grade Canon gear and promptly proceeded to fiddle with all manner of buttons while he got ever-more frustrated. In the end, someone stepped in with a compact (sacrilege!) took the picture and stated with some sarcasm, 'There you go. All done.' Said owner of the Canon stormed out muttering to himself something about 'upstarts' and the 'proper procedure'.

The point I'm trying to make is that things have to change, and if



In AP 25 July we asked...

Have you ever updated the firmware for your camera?

You answered...

A Yes, I update whenever firmware is available	59%
B Yes, when I remember	15%
C No, I have no idea how to do it	13%
D No, I'm scared in case I break my camera	7%
E No, I had no idea I could do this	6%

What you said

'With my Fujifilm X-series cameras it makes sense to upgrade firmware with both my bodies and lenses. You wouldn't drive a car and not get it serviced regularly'

'I've updated the firmware on two cameras. It's reasonably straightforward if you're a bit of a techie, but it can be a bit daunting to someone who isn't. Just one example from the Canon EOS 5D Mark II instructions: "Please download the compressed, self-extracting file that matches your computer's operating system and extract the contents... to create the firmware update file" would perhaps put some off'

'If I become aware of it, yes I'd update the firmware. As almost all my kit was bought second-hand, I'm not on the manufacturers' mailing lists, so I generally only find out when I have a problem'

Join the debate on the AP forum

This week we ask

Is there a future for camera clubs?

Vote online www.amateurphotographer.co.uk

Guess the date



Every other week we post an old AP cover on our Facebook page and all you have to do is guess the issue date (day/month/year). To guess the date of this cover (above), head over to www.facebook.com/Amateur.photographer.magazine. Forum members can also enter via the Forum.



The camera in AP 25 July was a Sigma SA-1. The winner is 'Kirsty aka Boo Devoto' from Essex, whose correct guess was the first drawn at random

organisations, and the people who make up an organisation, find it impossible, or choose not to, then they will die a natural death. Much like the independent camera shop has had to find new ways of offering a different kind of 'value' to its customers, so must the humble camera club. **David Richards, Dorset**

I feel I should speak up for the group I was lucky enough to join two years ago.

The photography bug really bit in early 2013 and I decided to try to increase my knowledge, so joining a club seemed like a good idea. A quick internet search brought up a number of local clubs, and I duly contacted them.

Several did not bother to answer my emails and one telephone enquiry ended when the membership secretary told me, 'We are a Canon-only club, so don't bother coming if you use another make.' Finally, I received a welcoming and very positive reply from Low Barns Photography Group.

I could not have been luckier in my choice. Not only do members use a wide range of makes and styles of camera, but they also offered, in my first winter of membership, a beginner's technical course. I learnt a lot and made some good friends. The second



Gordon Dewar's shot of a gull joining the Red Arrows synchro pair

winter they offered a monthly intermediate course. My photography has improved no end. I enter the monthly competitions, and although I have yet to win or even be placed in one, I feel my images don't look out of place on the club wall.

The range of my hobby and my enjoyment have been much enhanced by being a member. While I'm aware that not all clubs are friendly, I'd recommend joining one – and if you're unlucky in your choice, try another.

Geoff Dabbs, Co Durham

We had a huge response to Harry Kitchen's letter on camera clubs in AP 25 July. It's produced a lot of different reactions, but I'm pleased that many people

have found clubs they enjoy.

Another question is, what is the future for camera clubs? Is there still a place for them when a younger generation relies so much on the internet? Why not have your say in this week's poll (page 19)? – Richard Sibley, deputy editor

Gull-y gosh

In response to your *Big picture* of a gull flying alongside the Red Arrows (AP 27 June), here's my image (above) to complete the air show. This time a gull flew in front of the Red Arrows synchro pair, at Scotland's National Airshow on 25 July. I used a Nikon D2Xs and Nikkor AF-S VR 70-200mm f/2.8 lens to capture the shot.

Gordon Dewar, via email

0 ale Tuesday 18 August

Hollywood style
Damien Lovegrove explains how to mimic classic Hollywood portraits with a few lighting tricks

Antarctic wildlife
David Tipling explores the bird and animal life on South Georgia

Voigtlander MFT 10.5mm f/0.95 Nokton
Damien Demolder tests a Micro Four Thirds-system wideangle lens with a huge aperture

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Digital Armageddon

Photographers have been warned they must print images they want to preserve or treasured photos may become unavailable to future generations when digital storage media becomes obsolete. **Chris Cheesman** investigates

Print it or lose it – that's the stark warning from the Royal Photographic Society (RPS) and Photo Marketing Association, after Google vice-president Vint Cerf recently warned of a 'digital dark age', where data stored on computers will be lost forever. Speaking at a meeting of the American Association for the Advancement of Science in San Jose, California, Cerf said, 'When you think about the quantity of documentation from our daily lives that's captured in digital form, like our interactions by email, people's tweets and all the [information on the] World Wide Web, it's clear that we stand to lose an awful lot of our history.'

Turn the clock back 175 years to when the emerging photographic trend of the day was more salt-print than selfie. Photography pioneer William Henry Fox Talbot was busy churning out prints from the earliest form of paper photography. Yet Talbot's work lives on today, bringing history to life in a recent exhibition at Tate Britain that documented daily activities and key mid-19th century moments, like the building of Nelson's Column.

These days, the zillions of photos languishing unsorted on computer hard drives and mobile phones are in danger of being lost forever if not properly archived. Such concerns





➤ have been collectively voiced by the photographic industry for years, but the message carries extra resonance now that a Google 'big gun' has fired a warning shot across the digital bows.

'Google's Cerf highlights a real concern for historians,' observes RPS director-general Michael Pritchard. 'We're still looking at Talbot calotypes from the 1840s and I suspect we will still be able to enjoy these and today's photographs, if they have been properly printed, in another 200 years.'

'I would be much less confident about anyone being able to view most amateur digital files, created today, in 200 years. How we archive, preserve and make available digital images (and other digital files) for the future is a real concern for organisations such as the British Library and the National Archives, and should be a concern for all digital photographers.'

Pritchard points to three areas that pose a threat: the durability of today's storage media – 'Will media survive in their environment?' he asks; second, the accessibility of storage media – 'Will they still work when played?'; and third, Pritchard questions whether machines of the future will be able to play back digital files, rendering them obsolete.

'The best estimates suggest that magnetic media [such as computer hard drives] have an average lifespan

Dave Kai-Piper's Nikon is tethered to a hard drive, so his photos are backed up on site. A firm called Data Wreck once helped save his work when 'static friction' blighted a small hard drive

Dave Kai-Piper offers his thoughts on back



WE ALL know the triple back-up method, but I have always been a little more relaxed. Unfortunately, this means I've almost been

caught out a few times. These days, I have a more advanced foolproof system for safeguarding my images.

For a start, everything goes on to a hard drive direct from site. My Nikon is pretty much always tethered and my Fujifilm gets backed up right after shoots. Images go on to my portable SSD and stay on my SSHD hard drive on the laptop. Next, I upload my 10 or so safety files to SmugMug. So whatever happens I have files to work from. If I only have my phone, I upload 10 or the most important images. If I have fast Wi-Fi, I'll try to get as many as I can online. As I shoot, Lightroom will tether, plus I've got the added storage of the SmugMug app and the Lightroom Smart collection. Each time I 'five-star'

an image, it gets backed up in real time. Through the Client login end on my site, my clients can also see these files real time via the web. The files are backed up, safe and where they need to be.

As for making physical back-ups, I don't tend to use RAID (Redundant Array of Independent Disks) storage. I have a couple of drives that are linked in such ways, but most drives are stored in Buffalo's DriveStation Duo – HD-WIU2/R1*. I've never had a problem with them, and the two units have been running now for six years non-stop.

Any time I've had a problem, it's been with smaller portable drives. They've ranged from static friction, or 'stiction' as it's also known, to troubles with software controllers and PSU problems. To fix my last drive – a small portable drive with stiction – I used a wonderful company called Data Wreck**. They saved my bacon. The last time I had a problem it was another drive, but still an off-the-shelf type. I'm not sure what

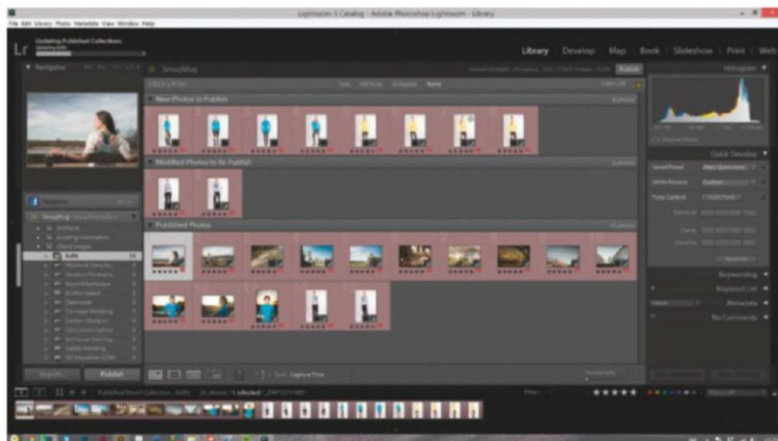


Photo archiving

The Royal Photographic Society advises printing digital pictures

Edit down your digital files to a small number that you really wish to preserve. Ideally, make traditional black & white prints (even from digital files) and ensure the prints are properly processed and washed, and then store them in archival boxes, in a controlled environment at less than 21°C and in a relative humidity of 30–50%. Realistically, for most of us, make prints using good-quality inks, on the best-quality rag paper and store them in archival sleeves and boxes away from extremes of heat/cold and in a dry environment, with pencil captions on the back (remember the [image file] metadata is important) too.

Digital-to-film option

Firstcall Photographic operates a digital-to-film service. Customers can send in up to 36 digital images as TIFF or JPEG files, on a CD, for transfer to film and return by post. It costs £22.50 for a roll of black & white film, £25 for colour negative and £30 for recording on colour-slide film (students can claim a £2.50 discount). For details, visit www.firstcall-photographic.co.uk.

'Magnetic media such as computer hard drives have an average lifespan of only 10-20 years'

of 10-20 years and CDs/DVDs around 10-25 years, and USB flash drives perhaps 10,000-plus read/write cycles,' he asserts.

Pritchard's view is one echoed by Georgia McCabe, CEO of the Photo Marketing Association (PMA), a trade body based in the USA. McCabe recently warned that 'the most photographed generation will have no pictures in ten years', and called on the photo industry to 'figure out' a way to convince the public that their photos must be properly stored. Although she does not go so far as advocating 'everyone print everything', she says mobile phones are particularly vulnerable,

especially where the user has changed phone, or accidentally damaged it without saving their images elsewhere. And what happens if 'your hard drive goes kaput?' she asked rhetorically, during an interview published on the PMA website.

Digital photos under threat

Even if your hard drive is fully fit, McCabe stresses that new gadgets bring design changes that are not all good. Unlike older models, the latest Apple MacBook Pro, for example, does not have a built-in DVD drive, so you'll need an external DVD drive for storage.

ing up your images

the problem is this time, but I think it's a software issue. I will get the data off it when I have the spare cash. Most of the important stuff was backed up on the other drives, but there was some stuff which I have edited versions of online and high res. I have the important stuff online, although I do need to re-think my storage since I have over 53 drives: some old, some new, some portable.

Recently, my partner and I went to see her mum. We were looking for an old family photo and spent the rest of the day giggling at baby photos. I liked that. This is what photography is all about. From now on I'm going to have a drive that I store all my edited files on each month, then print them. When they arrive I'm going to get a box and put them under the stairs. Then I know they'll last forever, and at some point in the future someone will be looking for something and then spend a day laughing like we did.

The next thing my mind leads me to, somewhat morbidly, is the fact that at some point I'm going to die. So what will happen to my neatly arranged back-up drives? And who will remember not to format that drive – if, indeed, they are still using drives in the future? Who's going to know my password?

My work will be lost – gone – so I urge you to print. Make books and use paper like the old days. This is the only way to safeguard your photography.

* www.buffalotech.com/products/desktop-hard-drives/drivestation/drivestation-duo-hd-wiu2r1
** www.datawreck.co.uk



© DAVE KALPPIER

'How many people remember VHS?' wonders McCabe. 'One thing that has maintained consistency for hundreds of years is something you can hold in your hands, put on a wall or even stick in a shoebox. Something that isn't subject to technological change.'

McCabe worries that precious photos of her granddaughter will one day be lost in cyberspace, never to be seen again. She explains that her son has 2,000 pictures of the child, 'but they are in the cloud' and she is afraid that companies operating cloud storage services will not be around forever.

'I asked my son, "What happens if [the cloud] just blows up?" He replied, "Come on, Mum. Apple isn't going away."

But McCabe is fearful. 'Did you

Discs may seem like a safe option, but rely on equipment being able to access them in years to come

ever think we'd drive down Lake Avenue [in Rochester, New York] and see Kodak buildings that have been dynamited? Did we ever think that the 58,000 who were employed there would be down to 3,000-5,000 people? Never. No one could have ever imagined that a name and



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company that led this industry would be where it is today. And so, for me, these moments in time are precious. I'm just scared that a savoured memory is going to end up in a digital landfill in the sky.'

Printing may be one answer, but even prints are not future-proof.

On its website, London lab Metro Imaging tells customers that Fujicolor Crystal Archive paper, for example, has a stability of more than 200 years, although only when kept in total darkness and under certain atmospheric conditions.

The RPS's Michael Pritchard points out that a number of organisations now make 'traditional prints of key digital assets because black & white silver-gelatin prints are still seen as the best medium to preserve





© MARTIN EVENING

Martin Evening says he 'can't pretend' to back up every week. Although fairly vigilant, a month can pass before backing up. He once lost images when he inadvertently backed up some corrupted image files, overwriting the good ones. Evening reckons his prints will last longer than his digital files (left)

Martin Evening discusses his thoughts on a potential digital 'dark age'



What methods do you use to back up your digital images?

I have triplicate copies of all my data. I keep one copy at the office ready

to back up and the other at a remote location and swap over periodically. That way there's always at least one fairly current copy kept at a separate address. It's a fairly simple JBOD ('Just a Bunch of Disks') solution. But whenever I consider upgrading a hard drive, I have to consider purchasing three similar drives. When working on an important project I use cloud servers to store copies that I back up daily, so all the data is retrievable.

Cloud data storage for image files is unrealistic if you have lots of images. How many days/weeks would it take to download, let alone upload, in order to recover from a crisis compared to swapping over a hard drive? I used to back up to DVD, but with the volume of data these days that's just not practical.

Which method is most effective?

The JBOD triple-copy system is the most effective and fastest way to recover from a disaster or data loss.

Are you vigilant about backing up?

Yes, it's a concern. A digital archive has to be curated and nurtured for the data to remain viable. That means upgrading hard drives every few years or so. With drives costing so little now, it's not such a problem while I'm around to manage

the system. I am fairly vigilant about all this, but I can't pretend I back up every week. Sometimes I go a month without backing up, but I'm mostly quite focused on keeping the system working.

Google VP Vint Cerf has warned of a 'digital dark age' where data stored on computers will be lost forever

He's right. It's all very well maintaining the scheduling and replacing drives, but what about after I die? Unless my daughter is prepared to maintain the archive I built up, most of what I have now will eventually disappear. That's up to her and future generations to decide if it's worth maintaining. For important photo collections by master photographers, I think continued print sales can make it viable for archivists to be employed beyond the artist's death to continue archive maintenance.

Have you lost any of your work?

Yes, I've lost a few images. Mostly stuff I shot and edited about 20 years ago. Unbeknown to me, the files got corrupted and I backed up the corruption to overwrite the good back-ups. It's easier to check a file's integrity now thankfully.

Do you ever print to archive?

Yes, and I have lots of print books and family print albums. I am sure those will survive longer. We'll see, or rather I won't, as I'll be dead. But maybe some of my work just might survive.



images for the long-term'. But he cautions: 'Obviously, not all traditional processes are stable, with the best example being colour C-type prints, which have frequently faded or colour-shifted even in 20-30 years. Even new methods of printing, such as inkjet prints, only have limited lifespans.'

The prophecies of doom over digital storage have not bypassed traditional film and paper suppliers. Firstcall Photographic, a UK supplier of darkroom kit, has gone back in time, offering a now sought-after service to convert digital images to black & white film,

'Look after your prints using the best papers and inks, archival sleeves and acid-free archival boxes'

Photojournalist Edmond Terakopian shares his tips for backing up



AS PHOTOGRAPHERS, both amateur and pro, we often spend crazy amounts of money on our cameras and lenses, go to great lengths to

reach a location, and take time to apply our skills to making images. We are often covering international conflicts, or demos and riots closer to home, and risking life and limb – only to trust our precious images to a single hard drive. As any IT professional will tell you, hard drives fail; it's just a question of when. So for me, it's essential to have a back-up strategy to ensure all my images, video and audio remain safe.

I use a combination of , off-site and cloud back-up. I have several terabytes of hard-drive storage, which is then duplicated at an off-site location. The important work and finished files are also backed up in the cloud. If I'm working on a long-term project, or if I'm on a foreign assignment, I also back up the material onto small portable SSD drives, which I carry on me until the work is fully backed up both on and off-site and delivered to the client. Hard drives are still the most effective method. Optical [such as DVD] doesn't work as it fails with time. Hard drives do break, though, so multiple copies are essential, kept in two physically different locations to safeguard against disaster.

I back up my work immediately. As soon as it's downloaded, I make back-up copies. If I'm on a fast-breaking news assignment and I only

have time to import a few key shots to wire quickly, the full import and back up will happen later in the day. In these situations I always keep the CF or SD cards on me at all times. I find the Think Tank Photo Pixel Pocket Rocket* ideal for carrying the cards and they slip easily into a pouch or my pocket.

Since drives can fail, get damaged through accident or be stolen, I think you have to be vigilant and spend the few minutes required to back up. Data recovery is a slow, expensive process, often without any results.

Thankfully, I've never lost work, but early in my career I did have a CF card fail with an important assignment on it. However, I managed to get the images from the card – after some panic! My ethos is that hard-drive failure should just be an annoyance, never a disaster.

There's a recent trend to print work for archiving and, even more so, for enjoyment. It's a good idea and I often make prints for collectors or exhibitions. Looking after these prints is important, so make sure you use archival sleeves and acid-free archival boxes. Using the best papers and inks is also crucial.

If there is a 'digital dark age' then society will have collapsed on a global scale, so our images won't be our priority – survival will be. Institutions should be safeguarding photographs for our cultural future, but for individuals, our priorities will be massively different. Let's hope the day never comes.

www.terakopian.com

***www.thinktankphoto.com**



© EDMOND TERAKOPIAN

colour negative or colour slide film.

"This niche service has proved extremely popular with a resurgence of interest in analogue, and people understanding the seriousness of future-proofing their images," wrote

Fears over digital storage prompt some to transfer their images to film

the firm's sales director Rodney Bates in a letter to *Amateur Photographer*, in reaction to comments by Google's Vint Cerf and PMA's Georgia McCabe.

"The conclusion from these two highly experienced and eminent experts in their field is

that we are sleepwalking into a photographic Armageddon,' he claims.

"The housekeeping of digital images is

often despised by photographers, as backing up is time-consuming and often overcomplicated by device manufacturers. This results in many photographers simply leaving their images on hard drives or entrusted to third-party cloud-storing service providers.'

He has a point. When did you last back-up your photos to a separate hard drive, let alone print them?

Printing your photos or transferring them to film delivers a sense of permanence in the same way that a self-winding, fully mechanical watch may be a safer option if you still want to tell the time in years to come.

Less could be said of the tech-heavy Apple Watch, for example, which is dependent on yet more existing technology for it to work, namely an iPhone.



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*Quote by Darron Hartas former editor of Master Photographer magazine



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The Nikon Model One, with 'MIOJ' (Made in Occupied Japan) engraved on the baseplate, was the very first Nikon camera. However, it was only in production from March 1948 to August 1949; it had no flash synch and came with either a 50mm f/3.5 or f/2 Nikkor lens in a collapsible mount. The decision to use a 24 x 32 format turned out to be a mistake as it made their camera incompatible with automated Kodak slide-copying equipment. Only a very few Nikon Model Ones made their way to the USA although some were sold to Occupation troops via the 'PX' shops. According to leading expert Robert Rotoloni, the probable number of Nikon Model One cameras which were sold to the public is approximately 450. In August 1949 the Nikon Model one was replaced by a second model that corrected the format, known as the Nikon M.



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WILDLIFE WATCH

Swallows

The end of summer and beginning of autumn is a great time to shoot these migratory birds, explains **David Tipling**

IF I WERE a bird, I'd like to be a swallow. It seems very appealing to spend the winter under the warm South African sun before lazily making my way back north, arriving at my favoured breeding site in spring just as it begins to warm up.

However, the reality is much more harsh, with swallows having to undergo an arduous annual journey across seas and deserts that involves them covering many thousands of miles on the wing.

Habitat

You'll find swallows in areas where there is a ready and accessible supply of their main diet, which is small insects. A good place to find these birds is in open pasture

with access to water, as it offers a good food source, while quiet farm buildings nearby offer the perfect place to nest.

Towards the end of the summer months through to the start of early autumn, large reed beds can be excellent places to look for pre-migration roosts as they prepare for the flight back to Africa.

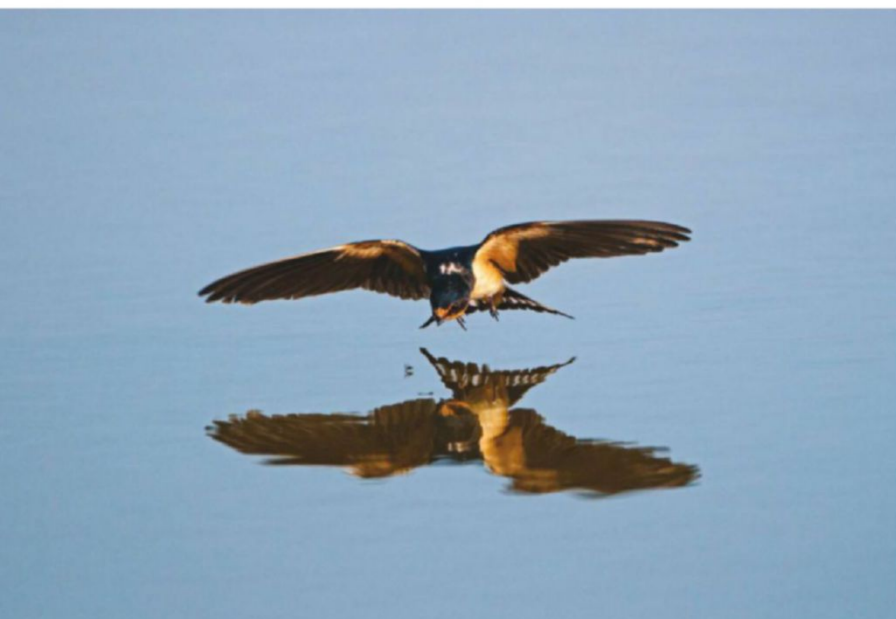
Best time to shoot

Swallows can be photographed at any time from spring to autumn. I find that the best opportunities on offer are between May and June when birds are breeding, and then when they start to gather to migrate from late August through September.



David Tipling

David is one of the most widely published wildlife photographers in the world. His pictures appear on hundreds of book and magazine covers, and have been used in many other forms, from wine labels to large projections across New York's Times Square. www.davidtipling.com



ALL PICTURES © DAVID TIPLING

There are plenty of opportunities to be had with fledglings

Shoot from a parked car to avoid disturbing the birds



Try to pre-focus on a point to have any hope of a sharp flight shot

KIT LIST

Flashgun

Swallow nests are rarely sited in well-lit corners of buildings, so a flashgun will almost certainly be required.



Telephoto lens

A lens of at least 400mm is recommended. Shorter lenses with the use of a remote trigger may be useful for photographing nesting swallows.



Adult swallows will hover in front of their young in order to feed





Shooting advice

In flight

Swallows tend to fly low to the ground with an easy free-flowing flight. Their size and speed does make them quite a challenge for flight shots against an open sky, but when flying against the landscape they'll really test your panning skills and your camera's autofocus capability, so be prepared to practise.

Pre-focus

On cool days when flies are in short supply, you'll find that swallows will often congregate over reed beds or bodies of water where there may be food. To have any hope of a sharp flight shot, I try to pre-focus and then track the out-of-focus bird as best I can in my viewfinder, before firing off a burst of shots when the swallow begins to come into focus. I have successfully photographed swallows plucking flies off the surface of a pool close to home using this method.

Nestlings

During the breeding season flight shots are on offer as birds feed their young in the nest. Nestlings make great subjects as they lean over the rim of the nest begging for food. Once on the wing, the young will stay close to the nest to continue to be fed. Further photographic opportunities are to be had when fledglings are perched on a fence or on low vegetation, as adults hover in front of hungry mouths delivering food. But don't get too close, as you could put the adults off feeding their young.

Mobile hide

By September swallows will start gathering in readiness to fly south for the winter. While flocks often like to perch along telegraph wires, they can also be found lined up along fences or on low vegetation. To avoid disturbing them, a parked car makes the perfect mobile hide and will allow you to shoot quietly.



Swallows can be found across most of Britain

About the swallow

Swallows are small birds with dark, glossy-blue backs, red throats, pale underparts and long tail streamers.

- **Location** The swallow is a traditional harbinger of spring and is our most widespread summer migrant. Found throughout Britain, they are most common in regions where cattle are grazed.
- **Size** 17-21cm including tail.
- **Nesting** The nest is a mud cup built inside outbuildings.
- **Diet** Flying insects. Swallows often feed by flying low around livestock, picking off flies.
- **Population** Increasing slowly since the late 1990s, and estimated to be around 860,000.



Playing with perspective

Daniel Picard's new book *Figure Fantasy* imagines what happens when pop culture heroes and villains take a break from the battle of good versus evil. He talks to **Jon Stapley**

When you were a child, you probably dreamed that one day you could get a job playing with toys. Before harsh reality kicked in, you might have dared to dream that some day, just maybe, you'd earn a living through playing with dolls, blocks and action figures.

Canadian photographer Daniel Picard is possibly the man who has got closest to that dream. Having spent years learning portrait photography and amassing a sizeable collection of statues and action figures from films, comics, books and games, he had the genius idea of combining the two, and so the *Figure Fantasy* series was born.

Absurd, dramatic, wry, and at

times hilarious, Dan's project has exploded in popularity. It's now a book of the same name, featuring contributions by filmmakers and geek culture luminaries Simon Pegg and Kevin Smith. Daniel even made a trip to San Diego Comic-Con in the USA last month to meet the people who love his images. We spoke to him about *Figure Fantasy*.

What inspired you to create *Figure Fantasy*?

While creating my photography portfolio using human models, I came across a really cool location that I wanted to shoot. However, construction was due to start in two days, making access impossible. With no models to call on at such short notice, I decided to go the next

Above: Picard appears in his own fantasy figure illusion

day and try it out with a little robot figure from my office. I was quite surprised by the end result and knew I had something very interesting to explore. After using a few of those robot photos, I found Sideshow's (www.sideshowtoy.com) website. They were making amazingly detailed 1/6-scale figures of characters I used to have as a kid. I knew right away that this photo series was about to get really fun.

You've said that the project was inspired by your love of 'figures and statues'. How big are these models in real life?

Yes, my love of these figures, and the characters they represent, is the driving force behind the project. I could do this type of photography with anything small, like office supplies, but I would have become bored with it after ten scenes. With these figures, I just want to tell more and more stories and jokes.

I'm currently working on photo #146 and I can't wait to be working





Above and left: Shooting fantasy figures in everyday locations brings a subtle humour to Picard's work

on photo #300 in a few years! I'd say 95% of my collection are 1:6 scale figures that are about 12in tall. The statues are a bit larger, but I don't have many of them right now. I will have more in the future as Sideshow starts to release its very interesting Court of the Dead series. This will

make me go to darker and more fantasy/supernatural places with my photos. You could say it's a trick of perspective, but you can think of it more like a camera with an infinite depth of field. To really sell the illusion, my characters must be as in focus as the background I'm

shooting them in, which is often quite complicated. There are lots of tricks I've taught myself. Getting rid of the stands and wires that hold the figures in complicated poses is another challenge I deal with.

Your amazing eye for locations brings these scenes alive. Do you think of an idea and then find a location, or vice versa?

Thank you! I've done it both ways and they both work. If I find a cool location, I can scout it first and shoot everything with the wideangle lens. Then, I can come back home, study every photo and sketch a ton of scenes. It's a great way to make the trips to these locations more productive, because I'm going in with a plan with my sketches on my phone. Things will probably change on location, but I'm not going in blind hoping to get at least one nice photo. Right now I have about 40 sketches of photo ideas on my phone that need locations, and I'm always looking out for new





Star Wars character Yoda takes a selfie while despatching a couple of pesky Stormtroopers

ones. For places that I've never been, I research all the locations online and do my scouting using whatever photos I can find. I usually start building scenes for my figures at home. It's cool and it allows me to be a bit more prepared and less overwhelmed when I arrive in new places.

Some of your images mix in real people with the figures. Is this an additional challenge?

I've taken a few photos with real people that are around my figures at their full (fake) size and it's not that much more complicated. I still have to make them look larger than they are, no matter if it's a real human or a real car. In fact, it kind of helps the illusion when something we are used to seeing is next to them since our eyes associate them as a group.

But the fact that the illusion works is more a compliment to the amazing talent at Sideshow and Hot Toys that make these incredible figures. I'm just the guy who takes cool photos of them and figured out a few magic tricks.

Figure Fantasy is steeped in pop culture. Do people need to recognise the figures?

I don't think it matters. I see my series and my book as a cool approach to storytelling. I came up with a story, I took a photo at an important moment, left many clues, and it's up to the viewer to imagine what came before and what happens after. I talk about my scenes with my daughter to see what she can

come up with, and since the book came out I've heard other parents do the same. It's a nice way to spend imaginative time with your kids.

The characters I use are often well known (especially the *Star Wars* ones, and the superheroes) but it's not an absolute must to know their back-story to enjoy any of my photos. It might get a bigger laugh if you know who's involved in the scene, because I often flip that character around and make them do things they are not known for. There are also more than 50 characters in my book and we mention all of them by name. It may even get people reading their comic books or watching the movies or TV shows they are associated with.

How much post-processing and compositing work do you do? I guess you don't have a truck-load of droids [above right]?

At the time of that droid in the truck photo, I had just four battle droids. They come in pairs and I've bought two red ones since. So yes, there is post-processing and compositing done on all the scenes. The amount of work involved goes hand-in-hand with how prepared I am. You brought up a great example: to get the droids to all line up perfectly, I recreated my truck in 1:6 scale in cardboard, so that I knew exactly how many could really fit and where to move them after each photo. So four became nine. I had to make sure to move the right ones so that whoever was hiding somebody behind was kept there to



Daniel didn't have enough figures for this shot, so he used compositing techniques

cast the shadows. Basically, it was a really long shoot!

How do you see the series developing in the future?

Everything just works right now. It took many years to get it to my current point of being able to think of a scene, shoot it once on location, and be done with it. I'm now able to get a lot more creative with the angles and lens choices, so that will open up new and exciting ways to tell stories. I'm also much quicker doing these photos now, and I can produce them more regularly.

I went from doing a photo a month in the beginning to my current rate of one to three a week. I tried some night shooting at Comic-Con since the nightlife here in Ottawa isn't that exciting to shoot. In the future, the main thing for me will be finding and shooting new locations. Buying new figures/statues and thinking of stories will happen as well, but finding locations is the hardest part.



Figure Fantasy: The Pop Culture Photography of Daniel Picard is available now, published by Insight Editions. Visit www.danielpicard.com to see more of Dan's images, and follow him on Twitter @DanPicardPhotos



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AFOY

Amateur Filmmaker of the Year competition

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

TO COINCIDE with the launch of The Video Mode website, we're pleased to announce our new Amateur Filmmaker of the Year (AFOY) competition. AFOY challenges you to get creative with your filmmaking, and gives you the opportunity to win some fantastic prizes worth £10,000 in total.

The competition is split into three rounds, each with its unique theme: Nature, Time and Love. To enter, submit a video no more than five minutes in length, of HD quality. You can shoot on any camera you'd like, and the content and editing are up to your imagination – so long as it fits

the round's particular theme.

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 person with the most points after three rounds, who will win the overall prize as well as title of Amateur Filmmaker of the Year.

Round One: Nature

In this round we ask you to film nature from a new perspective. Look at the world around you – from urban foxes at twilight, to a spectacular sunrise – from a new angle and get creative with unique viewpoints. To see examples, go to www.thevideomode.com/examples.

Rounds and dates

Below is a list of the competition rounds, their themes and the dates you need to know. To view the results, visit www.thevideomode.com. When planning your entry, take into consideration the criteria of fulfilling the brief, creativity and technical excellence on which you'll be judged.

Theme	Opens	Closes
Round One: Nature	1 Aug	30 Sep
Round Two: Time	1 Oct	31 Dec
Round Three: Love	1 Jan	28 Feb

The overall winner will be announced in April 2016

Prizes

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Canon Legria Mini X, worth £329.99

Round Two

Canon EOS 5D Mark III, worth £2,499.99

Canon Legria Mini X, worth £329.99

Round Three

Canon XC10 (with 128GB CFast card
and reader), worth £1,999.99

Canon Legria Mini X, worth £329.99

Overall prize

Canon Cinema EOS C100 Mark II,
worth £3,599.99

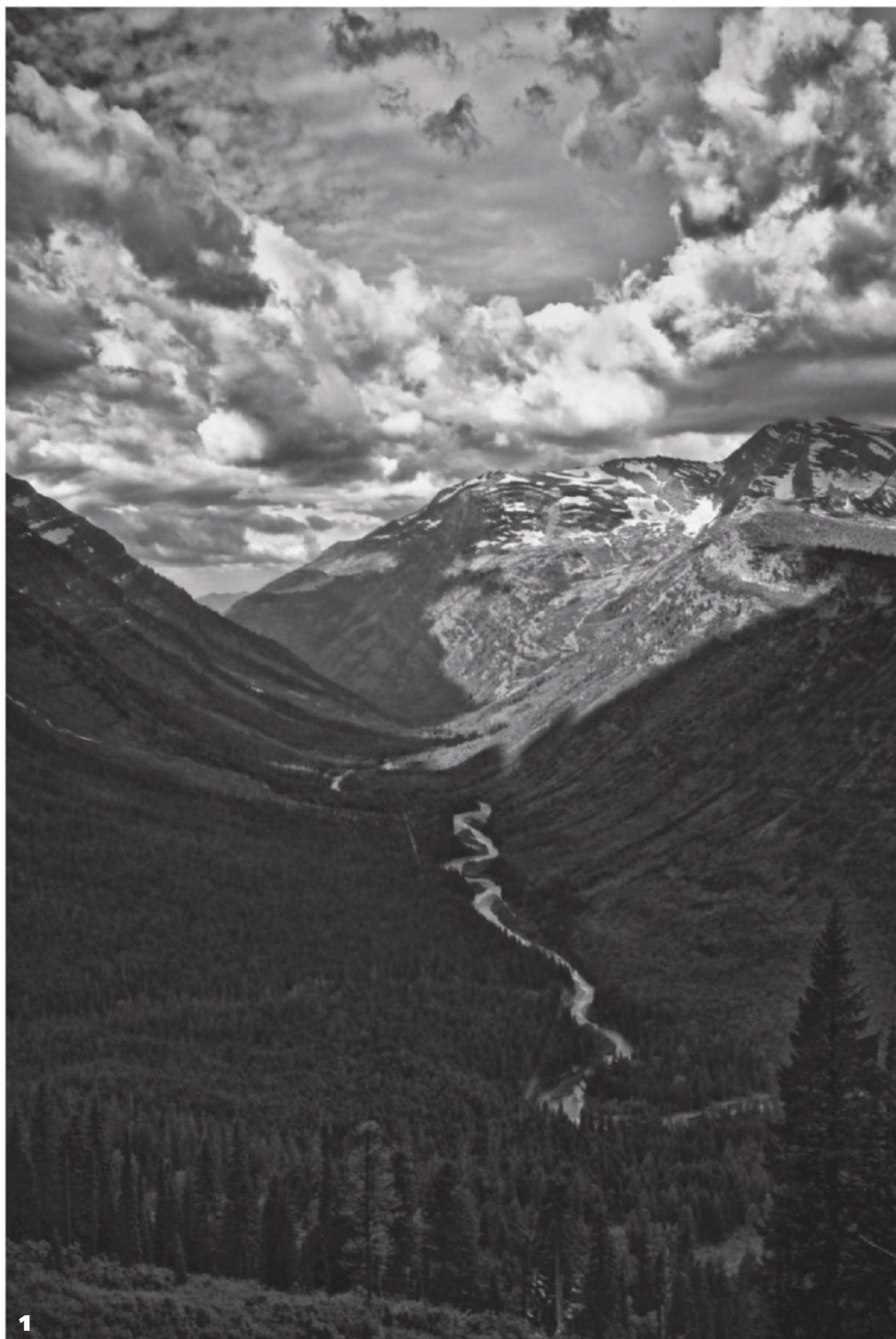
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to send us a link to your short film and to view the full terms and conditions

THE VIDEO MODE  In association with 

Reader Portfolio

Spotlight on readers' excellent images and how they captured them



Peng Wang, USA



To me, photography is the perfect combination of science and art,' says Peng. 'I was a physics major at university, so it was quite natural for me to fall in love with photography. I especially love shooting landscapes. Nature is so beautiful and powerful.

It fits perfectly with my love of travelling and outdoor activities. What I love about photography is that it gives you the ability to capture beautiful, powerful and transitional moments and fix them permanently. As for what I'd like to do next, I think I'd definitely like to try my hand at taking portraits.'





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Submit your images

Please see the 'Send us your pictures' section on page 3 for details or visit www.amateurphotographer.co.uk/portfolio



Glacier National Park

1 This image, taken at Glacier National Park in Montana, USA, has a powerful combination of elements. The light, the formation of the valley and the beautiful tonal range all work together to create a sublime interpretation of the landscape
Leica M-E, 35mm, 1/60sec at f/8, ISO 160

Tea Garden

2 Peng's mission was to create a Zen-like image at this Japanese Tea Garden in San Francisco, USA. He has gone some way to achieving it with this meditative look at the fractal state of nature
Leica M-E, 35mm, 1/180sec at f/5.6, ISO 250

Trees

3 It's the subtle tonal range that really makes this image. There isn't much to separate the contrasts and as a result we're forced to look harder in order to engage with the composition
Leica M9, 35mm, 1/16sec, ISO 160

Bridge

4 The most attractive feature of this image is its subtlest ingredient: the leaves that have fallen onto the bridge
Leica M3, 50mm, 1/50sec at f/5.6, Kodak T-Max 100 black & white film



Don Forsyth, Kent



Don always loved looking at mages when he was a child and eventually realised that photography would make a great hobby. His favourite subjects are portraiture, street photography and landscapes in the winter. Don explains that photography allows him to connect with his subject and immerse himself within whatever culture he happens to find himself in.

Berber Men

1 The arrangement of these Moroccan men means that our eye is drawn into the scene through the first subject and then led up by the rich colour of their garments to the second Nikon D3X, 24-70mm, 1/500sec at f/2.8, ISO 400

Goat & Shepherd

2 This is a very unusual portrait, but one that succeeds in communicating the trusting relationship between the goat and shepherd perfectly. The muted tones are a nice touch Nikon D3X, 24-70mm, 1/60sec at f/2.8, ISO 600





Horse

3 The lighting works well to reveal the noble pose of this subject, as well as the textures and patterns of the horse's hair
Leica M, 90mm, 1/125sec at f/4, ISO 160

Amazing Grace

5 Don found this model in Venice and was so struck by her appearance that he felt compelled to photograph her
Leica M, 50mm, 1/125sec at f/1.4, ISO 100

Turban

4 There is something utterly engaging about this portrait taken in Delhi, India. The eye contact is clearly the most crucial detail
Nikon D3X, 24-70mm, 1/125sec at f/2.8, ISO 400

Shaving Monk

6 Don has captured this young Burmese monk shaving, and rendered it unfamiliar through a nice handling of lighting
Nikon D3X, 24-70mm, 1/250sec at f/2.8, ISO 400



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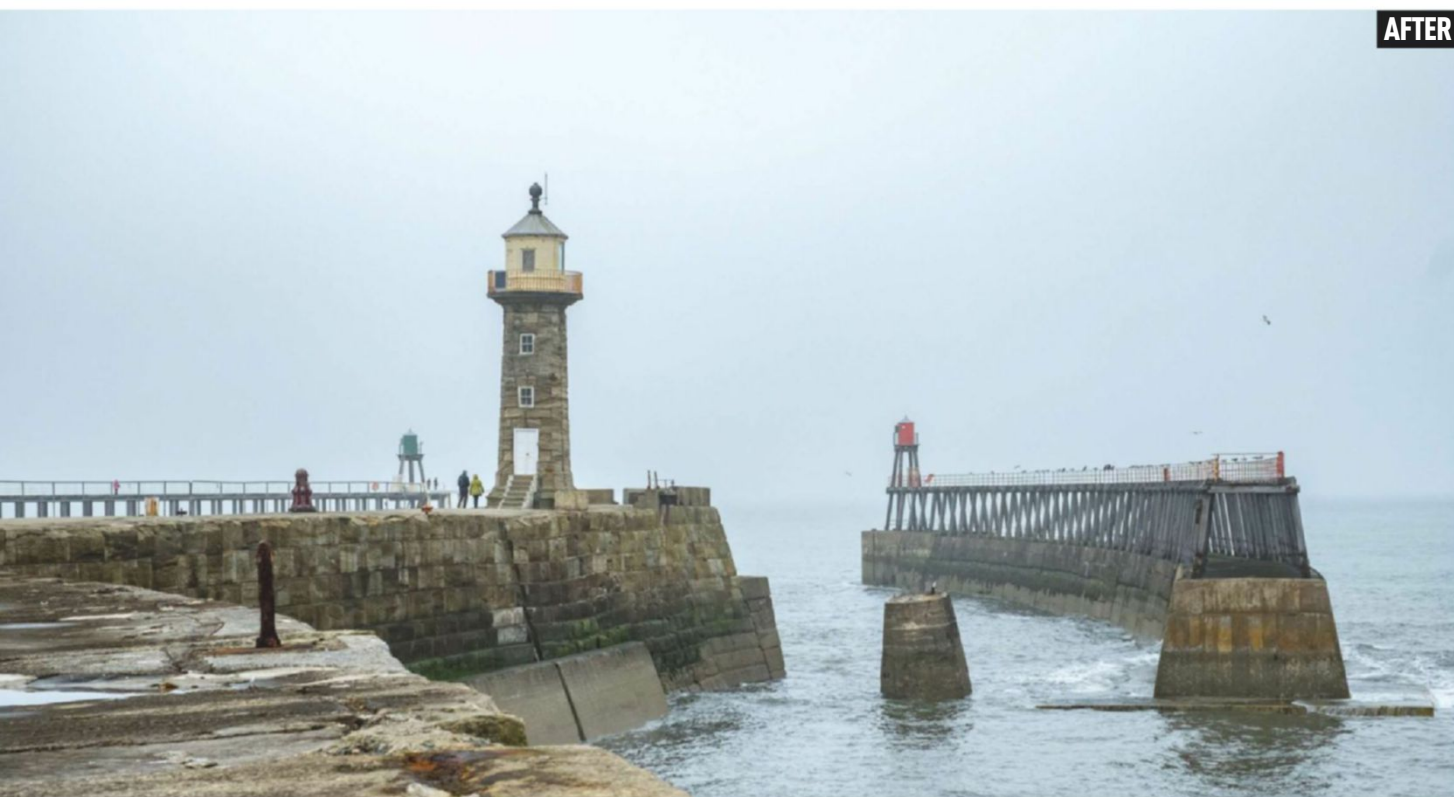


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Evening Class

Photoshop guru **Martin Evening** sorts out your photo-editing and post-processing problems



Removing the mist

KAREN Wilkinson has chosen a very interesting location here. She selected a good angle to shoot from and has composed the image nicely. The lighthouse has a lot of character, as do the other tower structures in the distance. In the version Karen sent us she chose to crop tightly around the lighthouse, but I have chosen to preserve more of the full-frame image. The misty atmosphere provides a beautiful light. In the unprocessed raw

image the photo looks rather too flat, but I thought this would be a good candidate image with which to demonstrate the new Dehaze adjustment that has been added to Camera Raw 9.1 (and Lightroom 6.1) via the Effects panel. By adding more Dehaze you can remove haze, mist or smokiness from a scene in a way that is similar to adding a positive Clarity adjustment, but is actually quite different in the way it brings out contrast detail.



1 Crop the photo

I can see that the photograph was shot using a Fujifilm Fujinon XF 18-55mm lens at a 40mm zoom setting (equivalent to 55mm on a full-frame 35mm camera) and with an effective aperture of f/10. I'd have expected the depth of field to be greater, but the foreground is actually slightly out of focus. I therefore decided it would be best to crop the bottom of the image, as shown here.

2 Apply Basic panel adjustments

I liked the panoramic-crop format this applied to the image and then went about applying some Basic panel adjustments to lighten the photograph. I also applied a full negative Highlights adjustment to preserve as much highlight detail as possible and lightened the Shadows slightly. This was combined with positive Clarity and Vibrance adjustments.



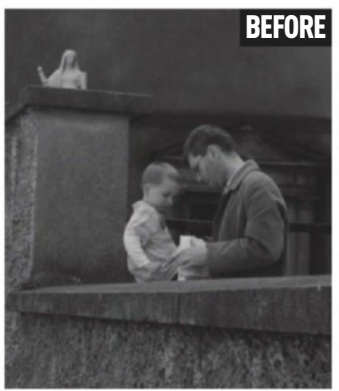
3 Apply a Dehaze adjustment

I then went to the Effects panel in Camera Raw 9.1 and applied a positive Dehaze adjustment. This helped remove some of the mist and brought out more contrast and detail in the middle distance. You have to be careful to adjust the white balance before you apply a Dehaze adjustment and it may sometimes be necessary to reduce the Vibrance afterwards.



Gentle contrast enhancement

THE MAIN focus of this photograph from Julian Ashleigh is the touching interaction between the man and his son as they both peer into the bag that the man is holding. I like the composition in this photograph, as well as the statue figure in the top left, looking down approvingly. The original version has a nice soft contrast feel to it. However, it's also rather dark. The following steps show how I first went about increasing the overall global contrast to extend the tonal range. I followed this by applying a localised Radial Filter adjustment to reverse the global contrast boost and preserve the soft-contrast feel over the area that contains the man and boy. My aim here was to achieve a photograph that had a nice balance of black & white tone, but at the same time preserve a delicate tone contrast on the two people in this scene.



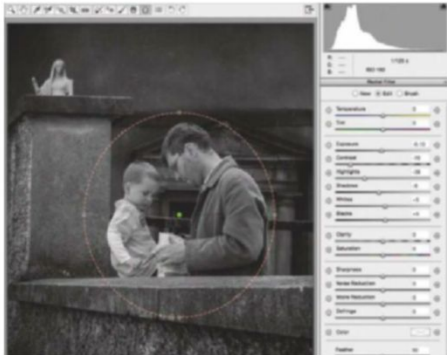
1 Apply an Upright adjustment

I felt that some of the lines in this image would benefit from being straightened. To do this, I first went to the Lens Corrections panel and applied a Full Upright correction, which I combined with a +35 Aspect Ratio adjustment. This squashed the image horizontally, straightened things out and helped preserve the proportions of the original.



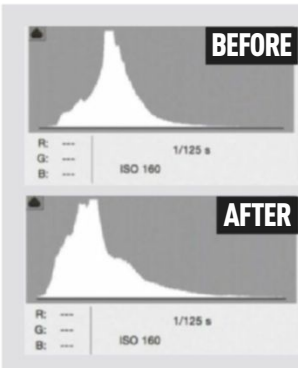
2 Crop and apply Basic panel adjustments

I selected the Crop tool and applied the crop shown here. I then went to the Basic panel, where I lightened the image, increased the global contrast and made some further adjustments that involved darkening the Highlights, lightening the Shadows and fine-tuning the Whites and Blacks sliders. These adjustments increased the overall global tone contrast.



3 Apply a Radial Filter adjustment

Next, I went to the Effects panel and applied a darkening vignette to darken the corners of the image. I followed this by selecting the Radial Filter and added a localised adjustment. The objective here was to decrease the tone contrast for the selected area – that of the boy and his father – to counter the global adjustment applied in Step 1.



Camera Raw histogram

THE HISTOGRAM in the Camera Raw dialogue (and also in the Lightroom Histogram panel) can provide some clues to the tonal range characteristics. Here, you can see a before and after histogram for the photograph shot by Julian Ashleigh. The first shows the histogram for an image that has soft contrast, where the shadows and highlights have yet to be optimised. The second shows the histogram for a

version with an extended tonal range where the shadows just start to clip, and the brightest highlights are just shy of the point where they are about to clip. Note also the wider abundance of tone values in the shadows to midtone region. The histogram provides a visual representation of the tones in an image. It's a useful guide to the way an image looks, which can help you check to the distribution of tones in a photograph.

Accessories

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

Ansmann Powerline Vario

£30 • www.ansmann.de/en

Andy Westlake tries out a versatile universal battery charger

At a glance

- Charges AA, AAA and Li-ion batteries
- 1A USB mains charger included
- Four plug adapters supplied
- Comes with 12V 650mAh in-car USB adapter and Micro USB cable

ANSMANN is a German company that specialises in batteries and power, selling both standard-sized batteries and replacement power packs for most types of camera. The Powerline Vario is a universal charger that's designed to recharge either a pair of AA or AAA cells, or almost any 3.6V or 7.2V Li-ion power pack using a pair of prongs that slide to align with the battery's contacts. Many similar devices exist, but the Ansmann stands out due to its neat, compact design and the fact that the charger unit works via a Micro USB input. This means that not only can it work off mains power or in the car, but it can also recharge your batteries using a generic USB charger, a powered USB socket on a computer or a portable power bank.

The current charge status is shown using a four-stage LCD display, with a slightly cheaper model, the Photocam Vario, differing only in the fact that it has a simplified LED-based display. Four interchangeable plugs are supplied for the mains adapter, allowing use in the UK, EU, North America and Australia. With a 1A USB output, this can also be used to charge other USB devices, such as smartphones or 7in tablets.

Verdict

I have been using this charger for a couple of months to top up the batteries of the various cameras I've been testing. On the whole, it works very well with most batteries, although there are a few exceptions – notably the Olympus BLN-1 used by most OM-D cameras and the Canon LPE-6 for many EOS DSLRs. However, for the batteries it does work with this is a versatile and reliable charging system that's perfect for travel.



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Freeloader CamCaddy 2 Universal Charger

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Vanguard Divider Bag 40

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THE VANGUARD Divider Bag series has a total of four cases, which range in size from the smallest Divider Bag 37 (which can house two DSLR cameras with attached lenses, up to four extra lenses a flashgun and accessories) to the largest Bag 52 (which houses two DSLR cameras with battery grips and lenses attached, eight extra lenses, a flash and accessories).

The Divider Bag 40 sits right in the middle of the range and, as the name suggests, it comes with a number of inner dividers that can be repositioned to suit the kit you carry. With the ability to hold two DSLR cameras with grips and attached lenses, up to six extra lenses, a flash unit and accessories, its storage capacity is impressive – and is all the more so when you consider it weighs just 900g when empty. However, it is worth noting that the Divider Bag 40 comes just with a carry handle on top and no shoulder straps. This is because Vanguard has designed the Divider Bag range primarily as storage and organisation cases, and not as backpacks or carrier

bags. With this in mind, the range is still great for keeping all your lenses and cameras in one place – whether in the studio, at home or in the car for a big shoot. It's also possible to fit it inside a Vanguard hard case and, in our test, the Divider 40 fitted snugly inside the Vanguard Supreme 40F waterproof and airtight hard case (£130). If you have multiple kits, using the Divider 40 to store each set, then swapping it in and out of a hard case, is an alternative to unpacking and repacking.

The build quality is good, there's plenty of thick, soft padding to protect your gear and it has a couple of extra zippered pockets. For photographers looking to streamline their storage, this is a great accessory to invest in.

Callum McNerney-Riley



Amateur Photographer

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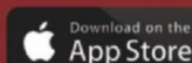


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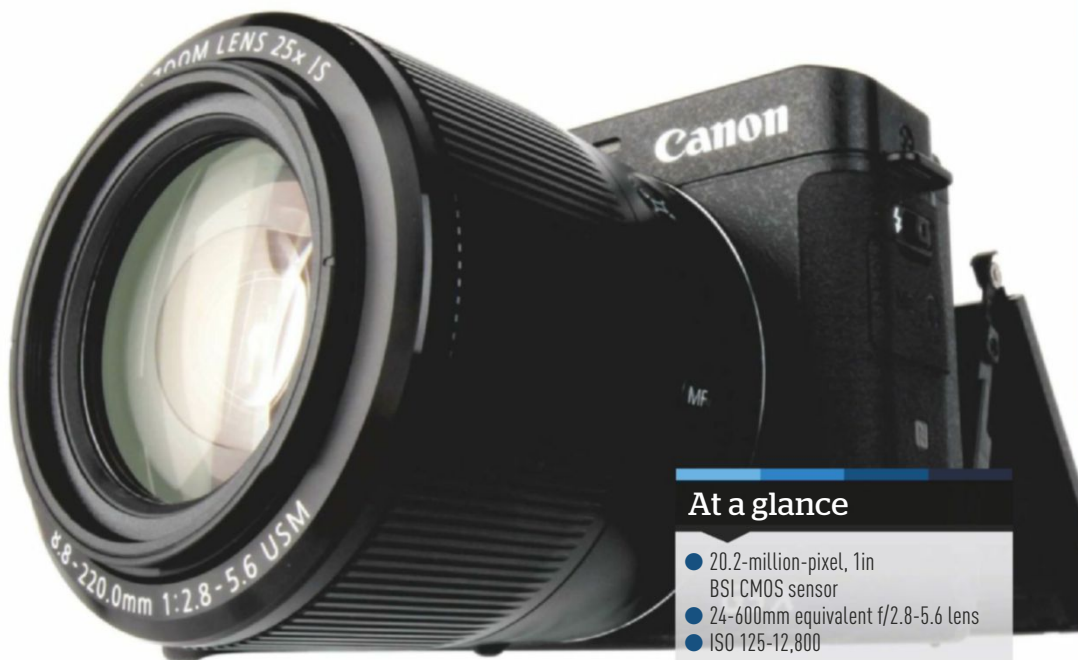
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At a glance

- 20.2-million-pixel, 1in BSI CMOS sensor
- 24-600mm equivalent f/2.8-5.6 lens
- ISO 125-12,800
- 1.62-million-dot tilting touchscreen
- Dustproof and splashproof construction
- 5.9fps continuous shooting
- £800

Canon PowerShot G1 X

Canon's latest enthusiast compact offers a compelling combination of a long zoom range and a relatively large 1in sensor. **Andy Westlake** tests it out

For and against

- + Huge lens range covers almost any subject
- + Good image quality from 1in sensor
- + Excellent touchscreen interface
- No built-in viewfinder
- Awkward ergonomics
- Poor continuous shooting with raw enabled

Where in the range



Canon PowerShot G1 X II
Price £490

The G1 X II features a 1.5in-type, 12.8MP sensor, 24-120mm equivalent f/2-3.9 lens and dual lens control rings



Canon PowerShot G7 X
Price £390

Canon's pocket powerhouse combines a 20.2MP, 1in sensor with a 24-100mm equivalent f/1.8-2.8 lens and a decent array of external controls

Data file

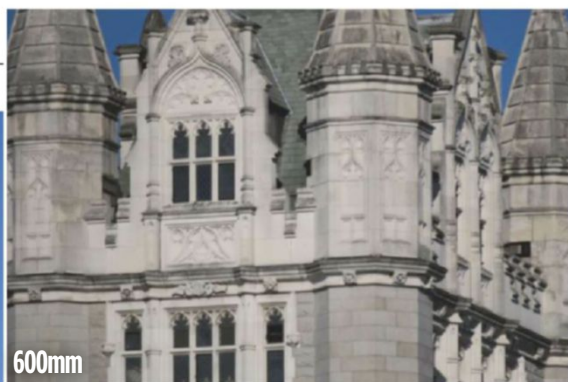
Sensor	20.2-million-pixel, 1in BSI CMOS
Output size	5472x3648 pixels
Lens	24-600mm equivalent f/2.8-5.6
Focal-length mag	2.7x
Shutter speeds	30-1/2,000sec + bulb
ISO	125-12,800
Exposure modes	PASM, auto, scene
Metering system	Multi, spot, average
Exposure comp	±3EV in 1/3 steps
Drive mode	5.9fps
LCD	3.2in, 1.62-million-dot tilting touchscreen
Viewfinder	Optional 2.36-million-dot OLED
AF points	31-point contrast detection
Video	Full HD at up to 60fps
External mic	3.5mm stereo
Memory card	SD, SDHC, SDXC
Power	NB-10L rechargeable Li-ion
Battery life	Approx 300 shots
Dimensions	123.3x76.5x105.3mm
Weight	733g (with battery and card)

24mm



One of the most welcome trends in camera design recently has been the adoption of relatively large sensors in fixed-lens compacts. In particular, the runaway success of Sony's Cyber-shot DSC-RX100 series showed that there's a real appetite for small cameras with much higher image quality than that achievable from small 1/2.3in or 1/1.8in sensors.

Canon was an early player in this game, but its relatively bulky PowerShot G1 X series never quite captured photographers' imaginations. Last year's PowerShot G7 X was a rather more successful design, adopting much the same pocket-camera template as the RX100s. Now,



600mm

The G3 X's lens covers a huge range from 24mm equivalent wideangle to 600mm equivalent telephoto



with the PowerShot G3 X, Canon is going after a different market, combining a 1in sensor with a 24–600mm equivalent lens.

This isn't uncharted territory, as the Sony Cyber-shot DSC-RX10 and Panasonic Lumix DMC-FZ1000 do something similar. Both feature relatively long zooms and electronic viewfinders in DSLR-like body designs. But Canon's approach has two crucial differences – it has a longer zoom lens with a slower maximum aperture, and it sacrifices the built-in viewfinder, apparently to keep the camera as small as possible. With other companies currently making a point of adding electronic viewfinders into small cameras, the lack of a viewfinder on the G3 X is a perplexing design

decision, and one that I found myself cursing throughout my time with the camera. More on that later, but first let's take a closer look at what the G3 X has to offer.

Features

To capture images, the G3 X uses a 20.2MP, 1in BSI CMOS sensor, which is likely the same Sony unit as that used in cameras like the Panasonic FZ1000, Sony RX10 and Canon's own G7 X. Like most of those cameras, the sensitivity range covers ISO 125–12,800. Shutter speeds run from 30secs–1/2,000sec, which isn't especially fast by modern standards, and continuous shooting is available at 5.9 frames per second, although this drops to 3.2fps if you want the camera

to refocus between shots.

However, there's no doubting the G3 X's headline feature – its 24–600mm equivalent optically stabilised zoom lens covers a vast wideangle to ultra-telephoto range, making it suitable for a huge array of subjects, from landscapes to wildlife. The minimum focus distance is a mere 5cm from the front of the lens at wideangle, extending to 85cm at full telephoto, so it's quite handy for close-ups too. But while the maximum aperture starts at f/2.8 at wideangle, it drops off pretty quickly, to f/4 at 50mm equivalent, f/5 at 85mm equivalent and f/5.6 all the way from 200mm equivalent through to its full telephoto setting. Canon has limited the minimum aperture

to f/11 throughout, which avoids excessive diffraction softening on this sensor format.

Additional exposure control is provided by a built-in 3-stop neutral density filter, which allows shooting wide open in bright sunlight. This is fortunate, as the lens doesn't have a filter thread itself, although it's possible to use 67mm-threaded attachments via the optional FA-DC67B filter adapter. This costs £40 in a kit with the LH-DC100 hood.

A small flash unit pops up from the top of the camera, which is released by a sliding switch on the side. Canon specifies an optimistic-sounding 6.8m range at wideangle and 3.1m at telephoto, but this likely assumes use of a high ISO setting. For more



The tilting LCD screen makes it easy to compose low-angle shots for additional impact



creative lighting, a hotshoe accepts Canon's EX-series flashguns, but sadly the built-in flash can't be used to control external units wirelessly.

Canon describes the G3 X as a 'stills and video powerhouse', and to this end it can record full HD 1,920x1,280-pixel movies at a full range of frame rates comprising 60, 50, 30, 25 and 24fps. Sound is recorded by a built-in stereo microphone, and the camera has a pair of 3.5mm stereo sockets for an external microphone and headphones. There's a configurable peaking display to aid manual focus, but no

overexposure warning. This counts as a perfectly respectable video specification, but is trumped by the 4K-capable FZ1000 and Sony's new but expensive RX10 II.

As we'd expect, the camera has built-in Wi-Fi, and as usual for Canon it has a wider range of applications than most. Images can be transferred between cameras, copied to a computer or output to a Wi-Fi-enabled printer. Naturally, the camera can also connect to a smartphone or tablet, with built-in NFC for easy pairing to a compatible device. Canon's new Camera Connect app for iOS and Android allows both image

sharing and remote operation of the camera, with plenty of manual control over shooting settings.

Screen and viewfinder

The rear of the G3 X is dominated by its 3.2in screen, which at 1.62 million dots is of an unusually high resolution. It is bright and detailed, but gives a somewhat over-exaggerated rendition of the G3 X's already-strong colours, with bright reds looking particularly cartoonish. The screen tilts both 45° downwards and 180° upwards, to face fully forwards for selfies, but the complex mechanism required for this results in an unusually large bezel around the LCD. Personally, I'd have preferred a fully articulating screen, which would work better for portrait-format shooting.

There's no built-in viewfinder, but thankfully the G3 X accepts Canon's EVF-DC1 viewfinder that's also used by the G1 X II and the EOS M3, although this adds £200 to the cost. This slides onto the hotshoe, tilts 90° upwards and has an eye sensor for automatic switchover from the LCD. The 2.36-million-dot OLED panel is sharp, bright and detailed, but it's small compared to the EVFs built into the Panasonic FZ1000 and Sony RX10. When attached to the camera, it also makes for a relatively bulky, awkwardly shaped

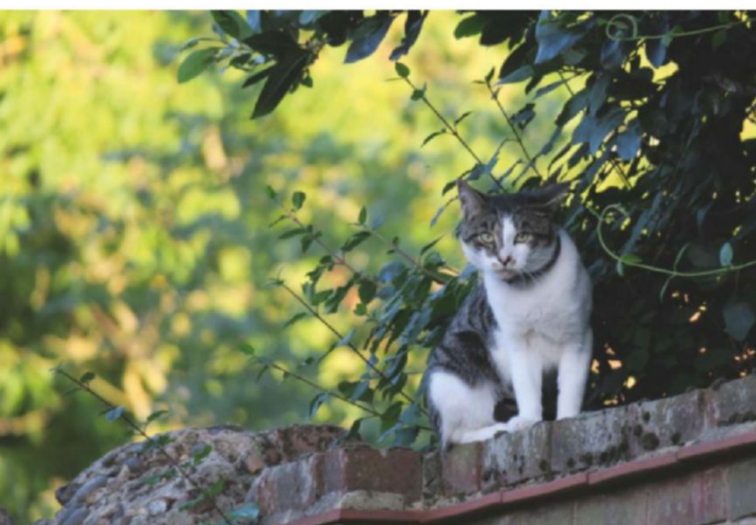
package, and spectacle wearers might find its hard rubber eyecup quite uncomfortable.

Build and handling

With its dustproof and splashproof magnesium-alloy body, the G3 X feels solidly made, and at 733g it's not overly heavy, especially considering the range of the lens. The camera manages to be smaller than its shorter-zoomed competitors with 1in sensors, at 123.3x76.5x105.3mm, although this is substantially down to the omission of an EVF.

The handgrip is covered in thick textured rubber that provides a positive hold, aided by a deep indentation for your second finger and a prominent 'hook' for your thumb. There's not quite so much real estate to wrap your hand around, though, compared to the larger grips on the Panasonic FZ1000 and Sony RX10. The camera's size and design mean that your left hand naturally ends up supporting the lens barrel.

The G3 X has a decent array of controls, mostly positioned for operation by your right hand. The top-plate hosts the power and movie buttons, along with the exposure-mode dial and front electronic dial. The exposure-compensation dial is perfectly placed for operation by your thumb, and offers up to 3EV



The 1in sensor delivers good quality at high ISOs. This was shot at ISO 1,600



The G3 X's design discourages shooting in portrait format using the LCD

correction in 1/3EV steps, which can also be used in conjunction with auto ISO in manual-exposure mode. A two-speed zoom lever around the shutter button allows reasonably precise composition.

Canon has squeezed plenty of buttons onto the back of the camera, but because the screen takes up so much space they feel rather cramped together. While the button placement is similar to other small Canons, including the PowerShot G1 X II and the EOS M3, there's no consistency in function assignment between these models, so shooting them side by side could be a recipe for confusion. The rear electronic dial is customisable to operate a range of functions, and I set it to change ISO directly. There's also a small customisable shortcut button placed under your thumb. The touchscreen provides a quick and responsive interface for changing settings and playing back images, but it's less useful than most for setting the focus point during normal shooting, simply because the G3 X's design means you don't have a hand free to use it.

The lens barrel has a large, smoothly rotating focus ring, which can be re-assigned to change shutter speed, aperture or ISO. However unlike on the Sony RX10 and Panasonic FZ1000, it can't be used as a zoom controller. A button on the side of the barrel engages manual focus, while a second operates Canon's framing-assist function. This is useful when you lose track of your subject while shooting at telephoto, as pressing it zooms the lens out to show a wider view, so you can reacquire your subject and then release the button to zoom in again. But given the size

of the lens barrel, it would have been nice to see a second control ring, as on the G1 X Mark II.

Canon has tweaked the on-screen interface on its PowerShot compacts to more closely resemble that used on its DSLRs, but the menu items and ordering are still rather different, with similar functions given completely different names. Other manufacturers have done a better job of unifying their interfaces between compact and interchangeable-lens cameras.

Unfortunately, I found that the G3 X wasn't especially easy or pleasant to shoot with using the LCD. In particular, the 600mm equivalent zoom is predictably difficult to use with the rear screen, as it's hard to hold the camera sufficiently steady to aim it properly and it's more or less impossible to pan the camera to follow a moving subject. This is especially true when you're shooting in portrait format and can't tilt the screen to allow a more stable shooting stance. However, when shooting with the optional EVF-DC1 viewfinder, it's much easier to use the long telephoto settings. This makes the omission of a built-in EVF all the more baffling.

Autofocus

In good light, the G3 X focuses quickly, decisively and accurately, just as we'd expect to see from a modern contrast-detection system. As light levels fall, though, the autofocus becomes progressively slower, especially at longer focal lengths with their slow maximum apertures, taking up to a second to acquire focus in just moderately low light. This means that the G3 X isn't necessarily a great choice

Focal points

The G3 X is a fully featured camera with a full range of external controls, but no viewfinder

Battery

The NB-10L Li-ion battery is good for 300 shots per charge, by CIPA standard tests.

Tripod socket

The G3 X has a standard 1/4in thread, but unusually adds a second socket to accept the anti-twist pins commonly used on video heads.

Flash release

A switch on the side of the camera releases the built-in flash.

Hotshoe

The hotshoe accepts both Canon-dedicated external flash units and the EVF-DC1 viewfinder.



Connectors

On one side of the camera you'll find standard 3.5mm stereo headphone and microphone sockets. On the other are USB and HDMI ports, along with a socket for the RS-60E3 cable release.

Mobile button

A small button behind the mode dial activates Wi-Fi for connection to your smartphone or tablet.





Canon's JPEGs give rich, saturated colours, although sometimes overly so

➤ for shooting indoors. Continuous focusing isn't particularly great, either. With no phase-detection elements to help it out, the G3 X is no match for either DSLRs or recent CSCs. This negates some – although not all – of the advantage of having such a long lens in a relatively small package. For example, shooting at an airshow I got relatively few shots in really sharp focus. Of course, you can always revert to manual focus in some situations, aided by a peaking display and magnified view. But again, the slow maximum aperture of the lens means that the live-view feed gets noisy in low light conditions.

Performance

With such a long zoom, the G3 X looks ideal for subjects such as sports and wildlife where continuous shooting is commonly used, and its headline 5.9fps shooting speed seems great for the task. Unfortunately, there are a couple of serious caveats. First, if you want autofocus and exposure adjusting between each frame, the shooting speed drops to 3.3fps, with the camera displaying a strangely low-resolution, out-of-focus-looking preview between frames that's particularly disconcerting when you use the EVF. Second, you only get this sort of speed shooting JPEG only – the moment you turn on raw, the camera slows to a crawl, shooting at a miserly 0.6fps, and blanking out the screen and viewfinder between shots. This is inexcusable for a £800 camera in 2015.

On a more positive note, the camera's metering and white balance systems work very well. I rarely found myself having to adjust exposure compensation to any great extent, or switch white

balance away from auto. The optical stabilisation of the lens also does a very good job of combating image blur from camera shake, although it struggles to deal with camera movement when shooting at full telephoto using the LCD.

In terms of image quality, the 1in sensor behaves much as we've come to expect, combining impressive detail at low resolution with relatively low noise at higher sensitivity settings. Not surprisingly for a 25x zoom, the lens is a little compromised, although in truth rather less than I'd expect. At the wide end of the range the centre of the frame tends to be very sharp, but the corners are visibly soft at the pixel level. Given that you've got 20.2 million pixels to play with, this is only likely to show up on prints larger than 12x8in. The lens actually gives the most even results across the frame at telephoto settings, although at the maximum aperture of f/5.6 there's some slight image softening due to diffraction, so images are never quite as crisp as those you get from cameras with faster, shorter zoom lenses like Canon's own PowerShot G7 X.

Canon's default JPEG processing gives bright, saturated colours with rich blue skies, but these could be a little overblown for some tastes. Noise reduction is also quite aggressive, blurring away fine detail even at moderate ISO settings. You can tone down colours using the 'My Colors' option in the Q Menu, but oddly, not if you're also shooting raw, as the menu option is then disabled. So if you want to shoot raw+JPEG, with the intention of using JPEGs by default and processing only your favourite shots from raw, you're stuck with Canon's slightly unsuitable processing.



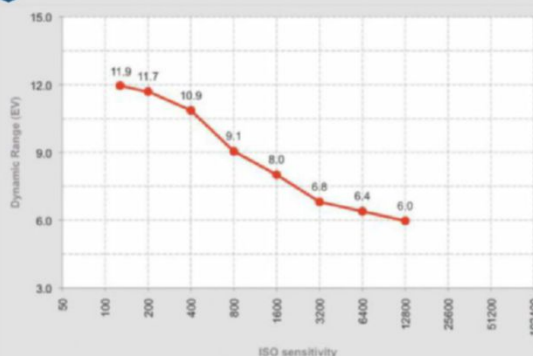
Lab results

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

WITH similar image quality to other premium compacts that use the same 20.2-million-pixel, BSI CMOS sensor, the G3 X gives superior results to superzoom cameras with small 1/2.3in sensors such as the PowerShot SX60 HS. It can record lots of detail at low ISOs, while giving reasonably low-noise images up to about ISO 800. Beyond this it gets increasingly stretched, and ISO 6,400 and above are barely acceptable.

With only limited software support available at the time of writing, we've not been able to look at raw image quality as far as we'd like, and spent more time looking at Canon's JPEGs than is ideal. The images are bright and punchy, but I suspect many enthusiasts might like to tone them down a little. Unfortunately, Canon doesn't allow you to modify the JPEG processing if you also want to record raw.

Dynamic range



The G3 X's 20.2MP sensor delivers good results at low ISO sensitivities in our Applied Imaging tests, with nearly 12EV of dynamic range at ISO 125. In practice, this means that it doesn't clip highlights as abruptly as cameras with smaller sensors tend to, while also retaining a bit more useful shadow detail. But at ISO 800 and above it falls off quite quickly, reflecting increasing noise levels particularly in the shadows. The top three ISO settings give particularly low readings.

Resolution

JPEG ISO 125 32	JPEG ISO 400 30	JPEG ISO 1,600 28
JPEG ISO 3,200 26	JPEG ISO 6,400 24	JPEG ISO 12,800 20

At its best around the 50mm equivalent mark on the lens, the G3 X is capable of resolving close to 3,200l/ph at ISO 125, which is as good as anything else we've seen with this sensor. With our high-contrast black & white resolution test chart, this drops only slightly as the ISO is raised, to about 2,800l/ph at ISO 1,600. But beyond this the resolution drops off more rapidly as noise increases, with the top two settings giving comparatively poor results.

Noise

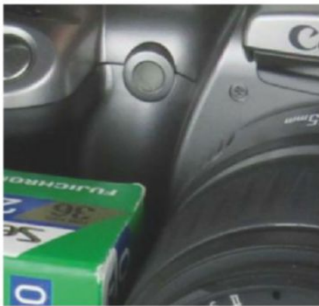
Both raw and JPEG images taken from our diorama scene are captured at the full range of ISO settings. The camera is sharpened in its default setting for JPEG images. Raw images are sharpened and noise reduction applied, to strike the best balance between resolution and noise.



JPEG ISO 125



JPEG ISO 400



JPEG ISO 1,600



JPEG ISO 3,200



JPEG ISO 6,400



JPEG ISO 12,800



At ISO 125 the G3 X gives very detailed images with barely any visible noise. A hint of luminance noise appears at ISO 400, but should have no serious effect on prints. At ISO 800 the impact of noise becomes a little more severe, with fine low-contrast detail beginning to smear away, and at ISO 1,600 this is accentuated, with shadow detail disappearing too. At ISO 3,200 the effects of noise and noise reduction are quite obvious, making it best avoided if possible, while ISO 6,400 and ISO 12,800 should only be used if there's no other choice.

This is familiar behaviour from this sensor, but bear in mind that the G3 X's slow maximum aperture forces you to raise the ISO sooner compared to its competitors as light levels drop, especially when shooting at the long end of the zoom where you'll need faster shutter speeds to avoid blurred images.

The competition



Panasonic Lumix DMC-FZ1000

Sensor: 20.1MP, BSI CMOS

Lens: 25-400mm equivalent f/2.8-4

ISO 80-25,600 (extended)

Price: £600

The G3 X's closest competitor has a shorter zoom, but includes an excellent built-in 2.36-million-dot electronic viewfinder and a fully articulating LCD. It can shoot at 12fps, has a maximum shutter speed of 1/1,600sec and is capable of 4K video recording.



Sony Cyber-shot DSC-RX10

Sensor: 20.2MP, BSI CMOS

Lens: 24-200mm equivalent f/2.8

ISO 125-25,600 (extended)

Price: £600

Sony's large-sensor, long-zoom compact offers a relatively restricted 24-200mm range, but with a very useful constant f/2.8 maximum aperture. A 1.44-million-dot EVF, 1.23-million-dot tilting screen and high-quality full HD video complete the package.



Panasonic Lumix DMC-FZ200

Sensor: 12.1MP, 1/2.3in CMOS

Lens: 24-600mm equivalent f/2.8

ISO 100-6,400 (extended)

Price: £310

The FZ200 sports an impressive-looking 24-600mm equivalent lens with a constant f/2.8 maximum aperture, a fully articulated screen and a built-in electronic viewfinder. However, it only uses a small 1/2.3in-type sensor, meaning lower image quality at high ISOs.

Our verdict

WHEN Canon first told us it was making a camera with a 1in sensor and 600mm equivalent zoom, it looked really exciting. Sadly, though, the G3 X manages to be rather less than the sum of its parts. The lack of a built-in viewfinder makes using that long lens effectively something of a trial, and while adding the EVF-DC1 viewfinder fixes this problem, it means the camera is unnecessarily bulky and takes the price to almost £1,000. The relatively slow lens also negates much of the high ISO advantage afforded by the larger sensor.

However, the real problem for the G3 X is the competition, in the shape of the highly accomplished Panasonic FZ1000 and Sony RX10. Both offer built-in viewfinders and superior ergonomics, meaning that the G3 X's longer lens becomes its

main selling point in comparison. But it falls short in supporting the typical photographic opportunities afforded by that extra zoom, with poor continuous shooting behaviour, especially in raw. The lack of an eye-level viewfinder also means that it's difficult to hold that long lens steady and keep it aimed at your subject. Granted, the G3 X is smaller than either of those cameras, but not to a degree that really matters in practical terms.

This is a shame, because if Canon had simply followed the established design template for long zoom cameras, the G3 X could have been really exciting. Instead, it feels too compromised in too many areas, and doesn't excel enough in any one area to really recommend it. Ultimately, for most purposes, you can get another camera that will do the job better and at a lower price.



FEATURES	8/10
BUILD & HANDLING	7/10
METERING	8/10
AUTOFOCUS	7/10
AWB & COLOUR	7/10
DYNAMIC RANGE	8/10
IMAGE QUALITY	8/10
VIEWFINDER/LCD	7/10

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In this shot the RX100 IV's built-in ND filter was put to good use to reduce the shutter speed to 4secs

Sony Cyber-shot DSC-RX100 IV

Sony set the bar high with the Cyber-shot DSC-RX100 III, and the **RX100 IV** promises to be even faster. **Michael Topham** tests the manufacturer's latest pocket compact

Every year since 2012, Sony has taken its advanced point-and-shoot compact camera and improved it. When we revealed our verdict of the RX100 III just over a year ago it was difficult to see where future developments would be made, but the new RX100 IV arrives with yet more attractive features and improvements to ensure it's right up there as one of the very best pocket-sized compact cameras.

Features

For the past two generations Sony has rolled out the RX100 II and the RX100 III with a 20.1-million-pixel Exmor R BSI-CMOS sensor. Although the resolution remains exactly the same on the RX100

IV, the configuration of the sensor is different. Rather than employing the previously used BSI, or back-illuminated sensor, the new Exmor RS chip incorporates a stacked design that repositions the circuitry from the edges of the sensor to behind the photodiodes, or pixels, themselves. The benefit of this is that it prevents high volumes of data having to work its way to the edge of the sensor, resulting in a data readout speed that Sony claims to be five times faster than the existing Exmor R sensor. To make this all possible and to ensure the RX100 IV's Bionz X processor doesn't falter with the extra demands, Sony has incorporated extra DRAM memory at the rear of the sensor to act as a buffer and

gradually feed the data to the image processor at a speed it can deal with.

The upside of the sophisticated sensor design allows the RX100 IV to be faster in a number of key areas. Not only can it rattle off a continuous burst at up to 16fps, but it can also shoot up to 1/32,000sec thanks to the new electronic shutter that deploys beyond 1/2,000sec.

However, the new sensor and speed benefits don't end there. Slow-motion video recording is possible at an incredible 1,000fps and 4K video recording is available with full-sensor readout and bit rates up to 100Mbps, but you'll need a UHS-I U3-compatible card to make use of it. Like the RX100 III, the native



Data file

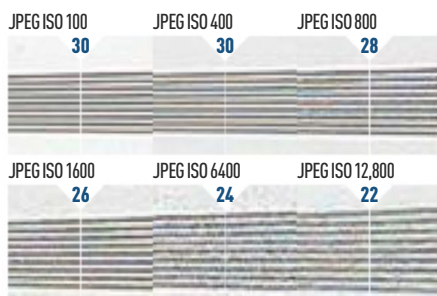
Sony Cyber-shot DSC-RX100 IV

Price	£849
Sensor	1in, 20.1-million-pixel, Exmor RS CMOS sensor
Image processor	Bionz X
Output size	5472x3648 pixels
Lens	24-70mm f/1.8-2.8 Zeiss Vario-Sonnar T*
Shutter speeds	30-1/2,000sec (4secs-1/32,000sec electronic shutter)
ISO	125-12,800 (expandable to ISO 80/100)
Exposure compensation	±3EV in 1/3EV steps
Drive mode	16fps continuous shooting
LCD	3in tilting LCD with 1.23million dots
Viewfinder	2.36 million dots
Video	4K (3840x2160) and full HD (1920x1080)
Memory card	2000x SDXC UHS-II 64GB
Power	NP-BX1 (up to 280 shots)
Dimensions	101.6x58.1x41mm
Weight	298g (with battery and card)

Sony Cyber-shot DSC-RX100 IV

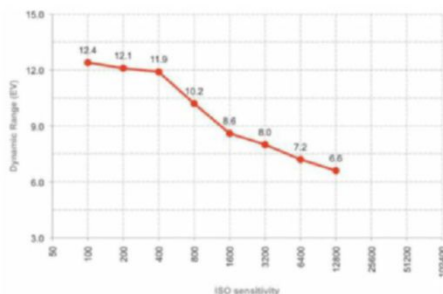
Resolution

For such a small camera, the RX100 IV resolves impressive detail from its 1in sensor. Set to its expanded ISO 100 setting the sensor resolves around 3,000 l/ph. The resolution starts to drop below this figure beyond ISO 400, with 2,800l/ph being recorded at ISO 800. As the sensitivity is increased detail drops off, with 2,200l/ph resolved at ISO 12,800.



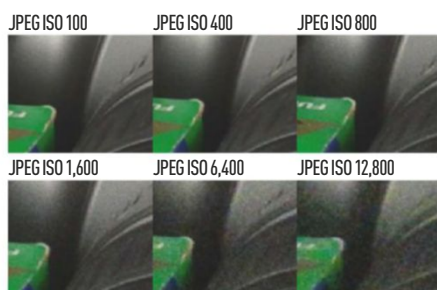
Dynamic range

The RX100 IV produces a similar dynamic range to the RX100 III. At ISO 100 it offers a respectable 12.4EV range, providing plenty of scope to extract shadow detail from raw files. Pushing up to ISO 1,600 sees the figure drop below 9EV and it manages to stay at a respectable 8EV at ISO 3,200. At ISO 6,400 and 12,800 the figures drop to 7.2EV and 6.6EV respectively.



Noise

Very smooth results are created from raw files right up to ISO 800, with luminance noise starting to creep in at ISO 1,600. Detail holds up very well up to ISO 3,200, and although finer details aren't as well resolved at ISO 6,400 you can push to this setting and achieve a usable result in a tight spot. Those who want to preserve the best quality will want to ensure they shoot in raw and use the camera at ISO 80-800.



➤ sensitivity range is ISO 125-12,800, with the option to expand it to ISO 80 and ISO 100 at the low end.

The RX100 IV shares many similarities with the RX100 III, including the same f/1.8-2.8 (24-70mm equivalent) Zeiss Vario-Sonnar T* lens, built-in ND filter, Wi-Fi, NFC connectivity and a 3in, 1.23-million-dot articulated screen at the rear. The pop-up EVF sees a jump in resolution to 2.36 million dots from 1.44 million dots, and it's positioned beside a pop-up flash.

Build and handling

Sony has taken the 'if it ain't broke don't fix it' approach to the design of the RX100 IV, and the only way of identifying that it's a new camera is by the model name and 4K branding on the top-plate. The magnesium-alloy body and robust feel suggest that it'll survive the test of time. The only downside of the premium metal finish is that it doesn't offer much in the way of grip, with only a tiny rubberised thumb rest at the rear to prevent slippage.

Flicking the finder switch automatically fires the camera into life. Holding the EVF up to the eye presents a clearer and sharper view than the RX100 III, and in high-contrast conditions where reflections on the screen can hinder composition and make it difficult to review images it's a godsend. The EVF doubles up as a great way of supporting the camera too, and by bracing it against my eye I found I was able to resolve sharper long-exposure images than by holding the camera at arm's length.

It's easy to change the exposure settings via the rear control dial, and a quick press of the Fn button reveals an on-screen menu for the most common shooting, image and exposure settings. The addition of a second control ring around the lens offers dual control of shutter speed and aperture in manual mode, while it can be used to control ISO, white balance and exposure compensation ($\pm 3\text{EV}$). The new diamond-knurled texture provides slightly more grip than on the RX100 III and is effective at operating the zoom precisely when it's set up for this purpose.

Performance

The RX100 IV's focusing performance is comparable to the RX100 III and the contrast-detection system is hasty by compact camera standards. The 0.09sec acquisition speed is only 0.03sec slower than Sony's Alpha 6000 that uses a more sophisticated hybrid AF system. There's focus tracking and face detection, but without a touchscreen you're reliant on tapping, or holding the directional buttons to reposition the AF point. As we said when reviewing the RX100 III, adding a touchscreen would make for more intuitive autofocus operation, but it would also undoubtedly make it more expensive.

Loaded with a Lexar Professional 2000x SDXC UHS-II 64GB memory card and set to speed priority continuous, the RX100 IV rattled out 44 extra-fine JPEGs at 16fps – an impressive figure made possible by equipping it with the new Exmor RS sensor. Switching the file format to raw lowers the burst speed to 9fps, and 29 images were recorded at this



speed before the buffer kicked in. As for the speed of the zoom, it can be set to two settings. Set to normal, it takes 1.8secs to get from one end of the zoom range to the other, compared to 1.2secs when set to fast.

I tested the new high frame rate (HFR) feature and it's a fascinating experience creating slow-motion videos at up to 1,000fps. To give you an idea of just how slow it is, 1sec of real-time footage is slowed down to about 40secs. After taking some time to get your head around how it works, it's easy to get carried away and become a little obsessed by it. The full suite of manual-exposure settings (PASM) is available to set exposure as normal and, in order to capture such slow footage, the shutter speed has to be set at 1/500sec or faster. To resolve high-quality footage without pushing the ISO too high, the best slow-motion results are created in bright lighting conditions.

Before capturing slow-motion footage the camera must be focused and the exposure set. With this done you can then put the RX100 IV into its standby mode, which means that it's ready to begin recording with a press of the record start/stop button. You're given two ways in which to capture footage, and these are selected in the main menu. 'Start Trigger' begins recording the second you press the start button and will record a few seconds of footage before stopping. However, the on-screen display shows the slowed-down footage, rather than what's happening live, so it's difficult to tell what is going on. The better option in most situations is to use the 'End Trigger' setting, which begins capturing footage continuously as soon as the camera is in the HFR standby mode. When you press the button the camera stops recording, and shows you the last few seconds of slowed down footage on the rear screen. After a few attempts, the end trigger method becomes fairly easy to use.





The RX100 IV offers a selection of in-camera picture styles. Here the black & white mode was used to create a moody shot

Our verdict

THE improvements made to the Sony Cyber-shot DSC-RX100 IV centre around its new sensor. The repositioning of the high-speed circuitry has resulted in it being able to shoot faster and offer new video capabilities, such as the high frame rate mode that allows you to record super-slow-motion footage. It's great fun creating slow-motion movie clips and gives photographers the opportunity to capture the fastest moving subjects in a different way – visit our online review to view our own examples (www.amateurphotographer.co.uk/SonyRX100IV).

The overall performance and image quality are very impressive for a camera so small, although our test results show it doesn't offer any advantages in these criteria over its predecessor. The extra demands of the new sensor asks more of the battery, but the fact it can be charged via USB does allow you to charge it in the car between locations, as I did.

Another feature that proved its worth in the field was the built-in ND filter, which is ideal for creating long exposures where you'd like to shoot up to 3 stops slower.

For trips away and times when you want a camera that can fit in your pocket, the RX100 IV is a perfect companion. A rubberised grip would have prevented it slipping from my hands, although my quick reaction prevented any serious damage, and a touchscreen would improve focus positioning and reviewing of images from an operational perspective. Other than these points, it's a pleasure to use and delivers superb image quality.

For and against

- + Impressive resolution for a camera so small
- + Advanced video capabilities
- + 16fps continuous shooting
- Reduced battery life (280 shots)
- No rubberised handgrip
- No touchscreen functionality



FEATURES	9/10
BUILD & HANDLING	8/10
METERING	9/10
AUTOFOCUS	8/10
AWB & COLOUR	9/10
DYNAMIC RANGE	8/10
IMAGE QUALITY	9/10
VIEWFINDER/LCD	9/10

Focal points

The Sony Cyber-shot DSC-RX100 IV is a powerful compact that boasts an impressive spec

PlayMemories

Download Sony's PlayMemories app and you'll be able to control the RX100 IV remotely and transfer images to compatible smartphones and tablets.

Apps

Downloadable apps via the in-camera PlayMemories menu can expand the functionality of the RX100 IV, with options of adding features such as time-lapse (£7.99), light painting (£3.99) and motion shot (£3.99).

Battery

The RX100 IV's NP-BX1 battery can be charged via Micro USB on the move. It offers enough stamina to shoot 280 shots or 140 minutes of movie footage using the screen or 230 shots and 115 minutes of movie shooting using the viewfinder.

Control ring

The control ring around the lens can be customised to your preference and you're given options to set it to exposure compensation, ISO, white balance, creative style, picture effect, zoom, aperture and shutter speed.



Adjustable screen

The screen can be angled upwards by 180° for selfie shooting and can be tilted down by 45° to aid composition when the camera is held up high.

Auto dual video record

The RX100 IV has an advanced dual video recording functionality, allowing users to capture 16.8-million-pixel still images during 4K video recording in any of 11 different composition patterns simply by pressing the shutter button.



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Simeon Quarrie is known for his creativity and storytelling in both video and photography.

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Pentax 110 lenses can be adapted for use on Micro Four Thirds cameras

110 nostalgia

Q I was sorting through my old cameras recently and came across my cherished old Pentax Auto 110 SLR, which I used for a while in the 1970s when I wanted to travel light. Getting it out again, I'm amazed at how small the camera is, and even more so the lenses. I was wondering whether there's any modern digital camera similar in size to the Pentax 110, so I can use these lenses again. I'm feeling nostalgic for a small camera as nice as my old one!

Robin Braithwaite

A Those Pentax 110 lenses are tiny because they're mechanically very simple. They're manual-focus only and have no built-in diaphragm. In the Auto 110 system the shutter also acted as the aperture.

It's possible to use these lenses on a few modern digital cameras, although their relatively small image circle limits compatibility. The best match is to Micro Four Thirds cameras, as the Four Thirds sensor is almost exactly the same size as a 110 negative. You can buy basic adapters online relatively inexpensively, which allow you to mount the lens and shoot at f/2.8, with manual focus of course. It's also

possible to find ones with an aperture diaphragm built in, but they're much more expensive.

As for cameras, try the small Panasonic Lumix DMC-GM or DMC-GF-series bodies. Crucially, the most recent models have a fast electronic shutter that allows you to shoot at f/2.8 – even in bright light. The tiny GM1 costs around £320, while the GM5 adds a built-in electronic viewfinder and costs £570. Meanwhile, the GF7 has a tilting LCD screen and costs £390.

Andy Westlake

Magnification numbers

Q What do the viewfinder magnification numbers in camera specifications mean? I assumed that a larger number meant a larger viewfinder, but I've just compared my Nikon D7200 with 0.94x magnification and my friend's D610 that has 0.7x, and its viewfinder is clearly bigger. Obviously the reason is because D610 is full frame, but then where do those numbers come from, and what's the point of having them?

Emma Jaspersen

A You're absolutely right that the D610 has a larger viewfinder because it's full frame. The D7200 has a higher magnification number

Arca confusion

Q I've read a lot recently about Arca Swiss standard quick releases, and it seems they're becoming more and more widely used. However, I'm a little confused, as I've been told that not all quick-release plates will fit on all tripod heads. Surely if it's a standard everything should fit together, and if it's not a standard it shouldn't be called one. Can you help, please?

Reg Thornby

A The answer to your question is that, while Arca Swiss is a simple and generally very effective quick-release system, it isn't really a standard at all. Instead, it comes with a huge range of variations around a basic theme. So while quick-release plates and tripod heads from various manufacturers are usually cross-compatible, this isn't always the case.

The reason behind this is that most companies make their own variants or copies of the basic design originated by Arca Swiss. The only really 'standard' part is the fact that the camera plate has a 38mm-wide base with a 45° dovetail that is held in place by a matching clamp on the tripod head. But beyond this there are all

th different interlock pins or screws, and these can re some comb plate and head not fitting together. Ju confusion, t systems tha should be A aren't, and others that don't advertise th compatible,

In my exp clamps and advertise th Swiss do fit specifically ensure the p head by acc stick with a **Andy West**

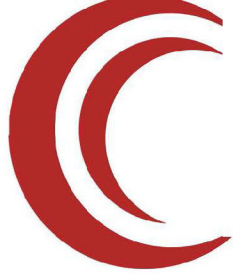


because it's quoted in a specific way, based on using a 50mm lens at infinity. The magnification analyses the size of a subject in the viewfinder image, compared to how it appears when looking at it directly. If the magnification is 1x, objects look exactly the same size in the viewfinder as they do without it.

The problem here is that, with different sensor sizes, a 50mm lens brings its own magnification

effect, by the so-called focal-length magnification factor, which for the DX-format D7200 is 1.5x. To properly compare viewfinder sizes, we need to divide by this factor, which leaves the D7200 with a 0.63x magnification. The overall result is that DSLR viewfinder specifications end up being positively misleading when you're trying to compare different formats.

Andy Westlake



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In the bag

Tony Moss is a UK-based wildlife photographer. www.tonymosswildlife.com



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Nikon D4 with Nikon AF-S Nikkor 500mm f/4G ED VR lens

1 This is my 'go-to' set-up for 85% of my photography. It has superb low-light, high ISO performance with great AF – and two handy memory card slots. The 500mm f/4 lens ensures excellent image quality and is a good compromise between weight and 'reach'.

Nikon AF-S Nikkor 70-200mm f/4G ED VR lens

2 The 70-200mm f/4 is a super-sharp lightweight lens. The weight saving, image quality and fantastic VR make up for the loss of a stop compared to the f/2.8. Being really sharp at f/4 also means I can get good bokeh if the shot requires it.

Nikon AF-S 1.4x teleconverter TC-14E II

3 The downside of using FX cameras is the loss of reach compared to DX. That said, I only tend to use the teleconverter when photographing small birds or mammals. Even taking it a full stop down, I can't perceive any difference in image quality.



Carl Zeiss 10x32 binoculars

4 A good pair of binoculars is nearly as important as my camera gear. I always scan the entire area around my chosen location to ensure I'm not going to spook either my intended subject or other animals not visible with the naked eye. I've lost count of the number of times I've bumped into a snoozing deer or similar sleeping animal.

LensCoat waterproof lens cover

5 This is always in my bag and more often than not fitted over my camera/lens whether rain is forecast or not. If I've invested a lot of time and effort to get to a location, then the last thing I want to do is pack up once the rain gets heavy. It certainly gives me some peace of mind that I'm not going to wreck my gear.

Lightweight 2x1m camo scrim

6 This is a brilliant accessory, which I use to break up my outline when lying down photographing badgers, and as a screen when sitting and photographing deer or in my car when using it as a mobile hide. Sometimes I just sit still in a wood with it draped over my head and camera gear. It's also good to roll up and sit on.

Additional kit Gitzo Systematic carbon-fibre tripod with Kirk BH-1 ball head and Wimberley Sidekick, Gitzo carbon-fibre monopod, Nikon D600, Nikon AF-S Nikkor 24-70mm f/2.8G ED lens, Nikon AF Nikkor 50mm f/1.8D lens, Sigma 150mm f/2.8 EX DG OS HSM APO macro lens, Nikon SB-600 flash, Giottos Rocket-air blower, microfibre cleaning cloth



BLAST FROM THE PAST

Pentax ME Super

Ivor Matanle remembers a much-loved 35mm SLR

LAUNCHED 1980

PRICE £160 with 50mm f/1.7 Pentax SMC-M lens (*World Camera Guide* 1981)

GUIDE PRICE TODAY £25-£55 with f/1.7 lens

THE ALL-METAL Pentax ME Super is a compact, solid, yet lightweight electronic 35mm SLR with the 'K' bayonet lens mount and either aperture-preferred automation or manual exposure. It's usually found in a chrome finish, although black versions also exist.

What's good The ME Super runs pretty much forever on two inexpensive LR44 batteries. The shutter-cocked indicator and film-winding indicator are on the back. The manual 1/125sec X and bulb settings are mechanical and require no batteries. The traditional ground-glass screen means great focus precision with fast lenses, and you can see their actual depths of field at larger apertures. The screen is bright with standard (f/1.4-f/2) lenses.

What's bad There's no depth of field preview, no autoexposure lock and no aperture indication in the finder. It has a fixed finder screen, just like modern DSLRs.



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Professor Newman on...

Backside Illumination

Professor Bob Newman considers Sony's new full-frame, backside-illuminated sensor for the Alpha 7R Mark II



Sony's Alpha 7R II has the first full-frame sensor to use backside illumination

Sony has sprung a surprise on camera buyers with the release of its Alpha 7R II. The Alpha 7 series is Sony's unique line of full-frame mirrorless system cameras, and offers photographers a host of other 'Unique Selling Propositions', ranging from the low pixel count, low-light-capable 'S' version to the high-pixel-count 'R' version. Sony recently updated the base 24.2-megapixel Alpha 7 to the Mark II with a number of carefully designed but unspectacular enhancements, which together have gathered very good reviews regarding its operational improvements over the original. One thing that wasn't improved, however, was the sensor.

The Mark II of the Alpha 7R carries across all those detail enhancements, but the big news is a brand new and groundbreaking sensor. Apart from a slight hike in pixel count (from 36.4 megapixels to 42.4 megapixels – I guess to make extracting 4K video from the sensor simpler), this sensor gains a unique attribute: it's the first commodity full-frame sensor using backside illumination or BSI.

BSI technology has generally been deployed for small sensors

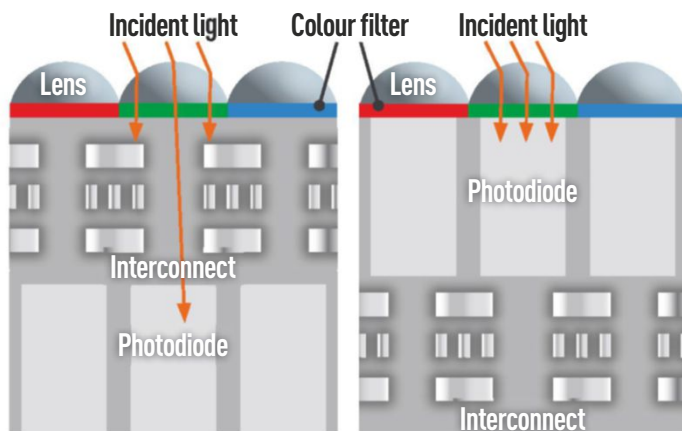
with very small pixels, where the lack of obstructive metal layers on top of the sensor allows an increase in light-gathering ability or quantum efficiency of those small pixels. While the new Sony sensor has many pixels, since it's a large sensor the pixels are not small by the standards of those where BSI has traditionally been applied, and the performance degradation due to the metal layers is proportionally much smaller. Until performance tests are available, the increase in quantum efficiency won't be known for sure, but I suspect that for this sensor, the aim of using

BSI has been somewhat different.

Digital cameras suffer from what might be called a 'pixel-shading' effect. If one considers the objective lens and pixel micro lens as a combined optical system, the f-number is limited by the slower of the two. So, even if you have an f/1.4 lens attached, you won't get the full effect if the micro lenses on the sensor are only f/2.

It has been discovered that manufacturers of cameras with this problem will often mask it by introducing a surreptitious boost to the ISO setting at wide apertures. This pixel-shading effect is worse at the edges of the frame, where the light is not perpendicular to the sensor. One major advantage of BSI is that the colour filter and micro lens 'toppings' sit directly on top of the photoreceptors, instead of being separated by a layer of metallisation. This means that their focal length is shorter, which in turn means that their f-numbers are smaller (remembering that f-number is the focal length divided by the aperture diameter, in this case the pixel width).

Such a sensor should be more immune to pixel-shading effects, and better suited to use with fast lenses – precisely the kind many of you will want to mount on it.

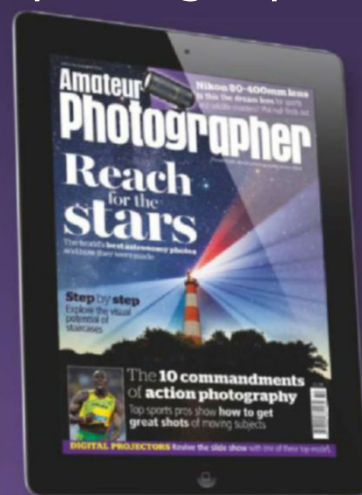


Conventional sensors have a layer of circuitry between the microlenses and photodiodes (above left), unlike the backside illuminated type (above right)

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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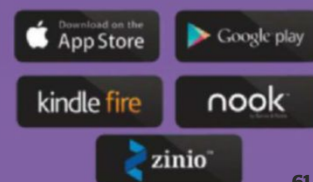


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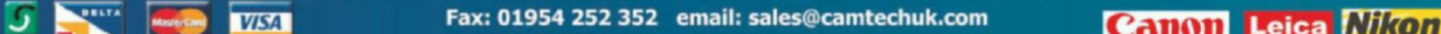
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VR II M-box.....£4299
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EX DG HSM.....£489
12-24 F4.5/5.6.....£499
EX DG HSM.....£399
15 F2.8 EX.....£199
15-30 F3.5/4.5 EX DG.....£299
18-50 F2.8 EX DC MAC.....£199
18-200 F3.5/6.3 DC box.....£139
50 F1.4 DG Mint.....£199/239
50 F2.8 EX.....£119
40-500 F4/6.3 DG OS.....£649
70-300 F4.5/6.3 DG OS.....£699
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17-50 F2.8 XR Di.....£199
70-300 F4.5/6.3 Di.....£239
VC USD.....£239
90 F2.8 Di box.....£249/299
90 F2.8.....£199
150-600 F5/6.3 Di VC USD M.....£699
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ATX Pro.....£349
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ATX Pro.....£349
TOK 80-400 F4.5/5.6.....£249
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14-50 F3.8/5.6.....£199
14-24 F2.8/3.5.....£179
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HLD-7 grip M.....£129
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OM-1 body chrome.....£129
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OM-2 chr body.....£129
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OM30 body.....£49
OM-10 body chrome.....£49
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165 F4 latest.....£249
200 F4 latest.....£199
200 F4 early.....£69
300 F4 early scruffy.....£99
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20-35 F4 box.....£269
28-70 F4 AI.....£59
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12-60 F2.8/4 SWD.....£99
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14-45 F3.5/5.6.....£89
14-50 F3.8/5.6.....£199
14-24 F2.8/3.5.....£179
35 F3.5.....£99
40-150 F3.5/4.5.....£49
40-150 F4/5.6.....£49
50 F2 macro.....£349
70-300 F4/5.6 box.....£219
25mm ext tube.....£99
FL-36 flash.....£99
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OMD-M1 body.....£749
OMD-E-M5 body box.....£379
OMD-EM10 body.....£329
Pen E-PL5 + 14-42.....£499
Pen E-PM1.....£149
Pen E-PM1 body.....£99
Pen E-P3 body.....£99
12-40 F2.8 Pro box.....£129
17 F2.8.....£129
45 F1.8.....£149
75-300 F4.8/6.7 II.....£299
Pen VF2 viewfinder.....£129
HLD-7 grip M.....£129
OLYMPUS MF OM USED
OM-4 Ti body blk.....£249
OM-1N body chr.....£129
OM-1 body chrome.....£129
OM-2SP body.....£99/239
OM-2n body chrome.....£169
OM-2n body black.....£149
OM-2 chr body.....£129
OM2000 body.....£149
OM30 body.....£49
OM-10 body chrome.....£49
OM-40P body.....£49
PENTAX 67 USED
45 F4.....£249
165 F4 latest.....£249
200 F4 latest.....£199
200 F4 early.....£69
300 F4 early scruffy.....£99
Pentax rear conv 1.4x.....£249
2x rear converter.....£179
Auto ext tubes.....£49
Vivitar 2x conv.....£49
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50mm F1.8 G AFS (Retro).....	Mint- £169
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Tamron 28-300mm F3.5-6.3 XR Di.....	E++ £99
Tamron 70-200mm F2.8 Di.....	E++ £349
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Tokina 20-35mm F2.8 ATX Pro.....	E++ £299
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Zeiss 35mm F2 ZF 2.....	E++ £599
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Zeiss 85mm F1.4 ZF.....	New £799
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Kenko 1.4x Converter DG Pro300.....	E++ £79
TC-20EII Converter.....	E++ £179
Metz 54MZ41 Flash.....	E++ £79
Nissin 5000GW Flash.....	Unused £59
Nissin 6000GT Flash.....	Unused £59
Nissin Di466 Flashgun.....	E++ £39
Nissin Di622 Flashgun.....	Mint- £69
Sigma EF430 Super Flash.....	E+ £39
Sigma EF500 Super Flash.....	E+ / E++ £29 - £35
Sigma EF530 ST DG TTL Flash.....	E++ £79
Sigma EM-140 DG Macroflash.....	Mint- £219
R1C1 Speedlight Commander Set.....	Mint- £429
SB218 Ringflash.....	E++ £99 - £179
SB22 Speedlight.....	E+ £35
SB22S Speedlight.....	E+ / E++ £35 - £39
SB23 Speedlight.....	E++ £29
SB24 Speedlight.....	E+ £39
SB25 Speedlight.....	E++ £49
SB26 Speedlight.....	E+ / E++ £49 - £59
SB27 Speedlight.....	E++ £59
SB28 Speedlight.....	E+ / E++ £49 - £69
SB800X Speedlight.....	E+ / E++ £39 - £49
SB800 Speedlight.....	E+ / Mint- £109 - £149
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SB900 Speedlight.....	E++ £59
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We carry one of the largest ranges of printer ink cartridges in the UK, with cartridges in stock for practically every inkjet printer. We always stock **Original** cartridges, which are made by your printer manufacturer, and in many cases we also offer **Compatible** cartridges, which are usually made by a UK company called **Jet Tec**. Using **Jet Tec Compatible** is a way of saving money, without compromising on the quality of your prints.

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- Total Digital Photography Magazine

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- Computer Upgrade Magazine



Canon		EPSON	
PGI29 Pixma Pro 1 Originals: Set of 12 Colours 36ml each	£229.99 £19.99	No.16 Fountain Pen Inks Originals: No.16 Set of 4 No.16 Black 5.4ml No.16 Colours 3.1ml each No.16XL Set of 4 No.16XL Black 12.9ml No.16XL Colours 6.5ml each	£22.99 £7.99 £5.99 £42.99 £14.99 £11.99
PGI72 Pixma Pro 10 Originals: Set of 10 Colours 14ml each	£94.99 £9.99	Compatibles: No.16 Set of 4 No.16 Black 12ml No.16 Colours 12ml each	£14.99 £3.99 £3.99
CLI42 Pixma Pro 100 Originals: Set of 8 Colours 13ml each Set of 8 Colours 14ml each	£74.99 £9.99 £27.99 £3.99	No.18 Daisy Inks Originals: No.18 Set of 4 No.18 Black 5.2ml No.18 Colours 3.3ml each No.18XL Set of 4 No.18XL Black 11.5ml No.18XL Colours 6.6ml each	£22.99 £7.99 £5.99 £42.99 £14.99 £11.99
CLI8 Pixma Pro 9000 Originals: Set of 8 Colours 14ml each Set of 8 Colours 14ml each	£74.99 £9.99 £27.99 £3.99	Compatibles: No.18 Set of 4 No.18 Black 12ml No.18 Colours 12ml each	£14.99 £3.99 £3.99
PGI9 Pixma Pro 9500 Originals: Set of 10 Colours 14ml each Set of 10 Colours 14ml each	£84.99 £8.99 £44.99 £4.99	No.24 Elephant Inks Originals: No.24 Set of 6 No.24 Black 4.6ml each No.24XL Set of 6 No.24XL Colours 8.7ml each Compatibles: No.24 Set of 6 No.24 Black 7ml No.24 Colours 7ml each	£41.99 £7.99 £11.99 £22.99 £3.99 £3.99
More Canon Inks...		No.26 Polar Bear Inks Originals: No.26 Set of 4 No.26 Black 6.2ml No.26 Colours 4.5ml each No.26XL Set of 4 No.26XL Black 12.1ml No.26XL Colours 9.7ml each Compatibles: No.26 Set of 4 No.26 Black 10ml No.26 Colours 7ml each	
PGI520/CLi521 Set of 5 PGI520 Black 19ml CLi521 Colours 9ml PGI525/CLi526 Set of 5 PGI525 Black 19ml CLi526 Colours 9ml PGI550/CLi551 Set of 5 PGI550 Black 15ml CLi551 Colours 7ml PGI550/CLi551XL Set of 5 PGI550XL Black 22ml CLi551XL Colours 11ml PG540 Black 8ml PG540XL Black 21ml CLi541 Colour 8ml CLi541XL Colour 15ml PG545XL Black 15ml CLi546XL Colour 13ml		Compatibles: PGI5 Black 27ml CLi8 Colours 13ml PGI5/CLi8 Set of 5 PGI520 Black 19ml CLi521 Colours 9ml PGI520/CLi521 Set of 5 PGI525 Black 19ml CLi526 Colours 9ml PGI525/CLi526 Set of 5 PGI550XL Black 25ml CLi551XL Colours 12ml PGI550/CLi551XL Set of 5 BCi6 Colours 15ml PG40 Black 28ml CLi41 Colour 24ml PG50 Black 28ml CLi51 Colour 24ml PG510 Black 11ml CLi511 Colour 11ml PG512 Black 18ml CLi513 Colour 15ml PG540XL Black 21ml CLi541XL Colour 15ml PG545XL Black 15ml PG546XL Black 21ml	
Compatibles: PGI5 Black 27ml CLi8 Colours 13ml PGI5/CLi8 Set of 5 PGI520 Black 19ml CLi521 Colours 9ml PGI520/CLi521 Set of 5 PGI525 Black 19ml CLi526 Colours 9ml PGI525/CLi526 Set of 5 PGI550XL Black 25ml CLi551XL Colours 12ml PGI550/CLi551XL Set of 5 BCi6 Colours 15ml PG40 Black 28ml CLi41 Colour 24ml PG50 Black 28ml CLi51 Colour 24ml PG510 Black 11ml CLi511 Colour 11ml PG512 Black 18ml CLi513 Colour 15ml PG540XL Black 21ml CLi541XL Colour 15ml PG545XL Black 15ml PG546XL Black 21ml		£4.99 £3.99 £19.99 £4.99 £3.99 £19.99 £3.99 £105.99 £14.99 £19.99 £27.99 £3.99 £12.99 £16.99 £12.99 £13.99 £15.99 £13.99 £15.99 £13.99 £14.99 £11.99 £15.99 £13.99 £15.99 £13.99 £14.99 £11.99 £12.99	
T0481-T0486 Seahorse Inks Originals: Set of 6 Colours 13ml each Compatibles: Set of 6 Colours 13ml each		£69.99 £16.99 £19.99 £4.99	
T0541-T0549 Frog Inks Originals: Set of 8 Colours 13ml each Compatibles: Set of 8 Colours 13ml each		£105.99 £14.99 £27.99 £3.99	
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Memo Style Albums:	Frisco 6x4 seven colours £5.99	Frisco 7x5 seven colours £2.29
Grace 6x4 100 photos £5.99	Frisco 8x6 seven colours £2.79	Frisco 9x6 seven colours £3.49
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Grace 7x5 100 photos £7.99	Frisco A4 seven colours £3.99	Frisco A3 seven colours £8.99
Grace 7x5 200 photos £13.99	Wood Bevel, Glass Front:	
Grafton 6x4 200 photos £9.99	Emilia 6x4 two colours £4.99	Emilia 7x5 two colours £5.99
Grafton 7x5 200 photos £13.99	Emilia 8x6 two colours £5.99	Emilia 10x8 two colours £7.99
Baby 6x4 200 photos £9.99	Emilia 12x8 two colours £8.99	Rio 6x4 four colours £5.99
Travel 6x4 200 photos £8.99	Rio 7x5 four colours £6.99	Rio 8x6 four colours £7.99
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T0791-T0796 Owl Inks Originals: Set of 6 Colours 11.1ml each Compatibles: Set of 6 Colours 11.1ml each	£72.99 £12.99 £19.99 £3.99		
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T0871-T0879 Flamingo Inks Originals: Set of 8 Colours 11.4ml each Compatibles: Set of 8 Colours 11.4ml each	£66.99 £9.99 £27.99 £3.99		
T0961-T0969 Husky Inks Originals: Set of 8 Colours 11.4ml each Compatibles: Set of 8 Colours 11.4ml each	£69.99 £8.99 £27.99 £3.99		
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Photo Satin 200gsm:		A4 50 sheets	
6x4 100 sheets +100 FREE	£9.99	A4 50 sheets	
A4 100 sheets +100 FREE	£19.99	A3 50 sheets	
Photo Glossy 200gsm:		A3+ 25 sheets	
6x4 100 sheets +100 FREE	£9.99	17" Roll 30 metres	
A4 20 sheets	£6.99	24" Roll 30 metres	
Premium Pearl 270gsm:		Ultra Pearl 295gsm:	
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A4 20 sheets +20 FREE	£8.99	7x5 100 sheets	
Premium Gloss 270gsm:		A4 25 sheets	
A4 25 sheets OFFER	£8.99	A3 25 sheets	
A3 25 sheets OFFER	£15.99	A3+ 25 sheets	
A3+ 25 sheets OFFER	£19.99	13" Roll 10 metres	
Smooth Pearl 310gsm:		17" Roll 30 metres	
6x4 100 sheets	£14.99	24" Roll 30 metres	
7x5 100 sheets	£17.99	Titanium Lustre 280gsm:	
A4 25 sheets	£12.99	A4 25 sheets	
A4 100 sheets	£39.99	A3 25 sheets	
A4 250 sheets	£84.99	A3+ 25 sheets	
A3 25 sheets	£25.99	Oyster 271gsm:	
A3+ 25 sheets	£35.99	6x4 100 sheets	
17" Roll 30 metres	£69.99	7x5 100 sheets	
24" Roll 30 metres	£96.99	A4 50 sheets	
Smooth Gloss 310gsm:		A3 25 sheets	
6x4 100 sheets	£14.99	A3+ 25 sheets	
7x5 100 sheets	£17.99	13" Roll 10 metres	
A4 25 sheets	£12.99	17" Roll 30 metres	
A4 100 sheets	£39.99	24" Roll 30 metres	
A3 25 sheets	£25.99	Gloss 271gsm:	
A3+ 25 sheets	£35.99	6x4 100 sheets	
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A4 50 sheets	£12.99	A4 50 sheets	
A3+ 50 sheets	£34.99	A3 25 sheets	
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A3+ 25 sheets	£42.99	A3 25 sheets	
Fotospeed		A3+ 25 sheets	
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24" Roll 30 metres	£85.99	Double Sided Matt 250gsm:	
PF Lustre 275gsm:		A4 100 sheets	
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7x5 100 sheets	£16.99	Fine Art / Fibre Base Papers:	
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A4 50 sheets	£17.99	FB Gloss A3 25 sheets	
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A4 20 sheets	£16.99	7x5 50 sheets	
A3 20 sheets	£37.99	A4 15 sheets	
A3+ 10 sheets	£24.99	Premium Semi-Gloss 251gsm:	
SG-201 Semi-Gloss 260gsm:		6x4 50 sheets	
6x4 50 sheets	£9.99	A4 20 sheets	
A4 20 sheets	£11.99	A3 20 sheets	
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LU-101 Pro Lustre 260gsm:		A4 50 sheets	
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A3 50 sheets	£32.99	A3+ 50 sheets	
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CUSTOMER REVIEW: D7100 Body
★★★★★ 'Quality bit of kit! Love it!'
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CUSTOMER REVIEW: EOS 70D + 18-135mm IS STM

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1080p movie mode
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CUSTOMER REVIEW: EOS 5D Mk III Digital SLR Camera

★★★★★ You haven't got one? Get one! Roland - Northampton

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Full Frame CMOS sensor

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1Dx Body £4499

CUSTOMER REVIEW: EOS 1D X Digital SLR Camera Body

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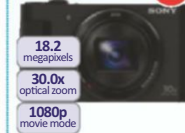
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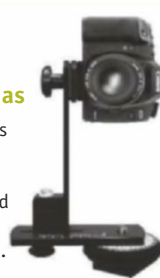
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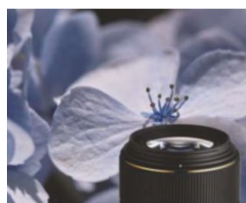
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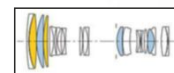
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7 FPS

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5 FPS

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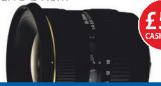
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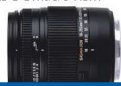


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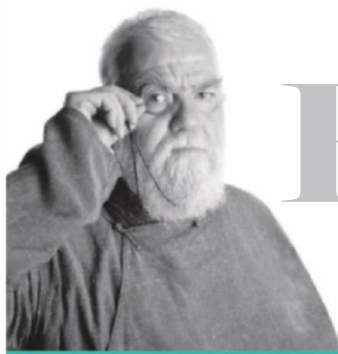


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Final Analysis

Roger Hicks considers...

Abandoned Barn, Mid-Ulster, Northern Ireland, 1999, by Donovan Wylie

The harp and crown of the Royal Ulster Constabulary, reinforced by the letters RUC underneath, evoke strong emotions in those who are familiar with the history of the Six Counties of Northern Ireland. Republicans see a symbol of oppression, while Unionists think of a band of men so brave they were collectively awarded the George Cross.

In 2001, the RUC became the Police Service of Northern Ireland, GC, and their old badge was replaced by one that is much more inclusive but also far less memorable. Also, it has to be said that the six-letter abbreviation PSNI GC lacks the immediacy and simplicity of the three-letter RUC. But what if you know nothing of Irish history in general, and of the RUC in particular? Is there really much of a picture here? Only 'sort of', otherwise it's a fairly generic change-and-decay image.

Many photographers are fascinated by change and decay, perhaps because a photograph is almost the polar opposite. The picture itself may fade or become dog-eared, but its subject matter is frozen forever. Also, as here, change and decay are often associated with wide variations in texture: again, the polar opposite of the uniform texture of almost all photographic prints.

Out of the ordinary

This is a picture that almost any photographer might have taken, but it is lifted out of the ordinary (a long way out of the ordinary) by the crowned harp almost exactly in the middle of the image. Normally, we are



© DONOVAN WYLIE/MAGNUM PHOTOS

'We cannot ignore our history. That would be foolish. Instead, we can make a determined effort to learn from it'

enjoined never to centre the principal feature of the picture – its 'focal point', the thing that first draws our attention – but rather to place it 'on the thirds', or at least asymmetrically, 'balanced' by some other element. If no other composition presents itself, those are useful guidelines, but as this picture demonstrates, they are guidelines rather than

rules. In a strict and literal sense, it recalls a target with a bullseye – the graffiti is very much Barthes' *punctum*, the thing that engages the viewer.

What of the second, cruder rendition of the badge below? Is it a faded, more battered version of the original? An earlier attempt or a child's copy? It doesn't matter, but its repetition reminds us still

more of both the passion and the passage of time. The RUC is now history, or at least, rebranded in order to distance it from its former self. The barn is history too. Maybe this is the only way to reconcile the twin views I described in the first paragraph: oppression and brutality versus bravery and self-sacrifice.

We cannot ignore our history. That would be foolish. But neither do we need to re-live it. Instead, we can make a determined effort to learn from it. And photographers can help us to do this.

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 website at www.rogerandfrances.com). Every week in this column Roger deconstructs a classic or contemporary photograph. **Next week he considers an image by Larry Towell**



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