

15
ACTIONS
& PRESETS
INSIDE!

MASTER DRIVE MODES

HOW TO CHOOSE AND USE THE RIGHT SETTINGS, WHATEVER YOU LOVE TO SHOOT



Digital Camera World

The world's favorite photography magazine

Issue 279 April 2024 www.digitalcameraworld.com

30 WAYS TO SHOOT SPRING!

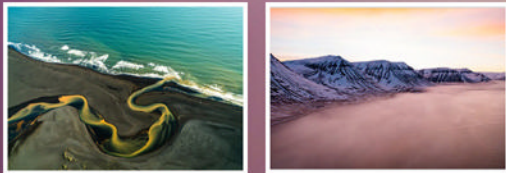
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PRO IN FOCUS

Chris Burkard on his love of photographing the ocean



44 MINS
OF VIDEO
TUTORIALS
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Fujifilm X100VI
Polaroid I-2
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15 actions & presets to boost your shots



9 all-new photo tips cards

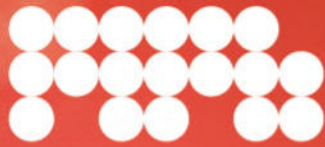


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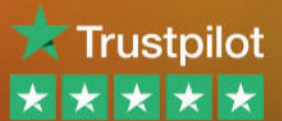


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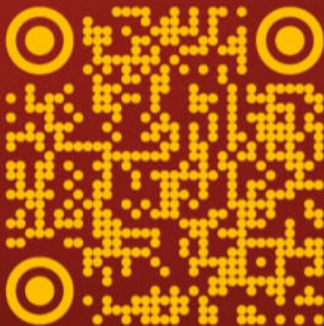
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Welcome



Longer days mean that we're on the cusp of one of the best times of year to take photos.

So equip yourself with

some hints and tips, courtesy of a masterclass from leading pro Simon Roy, in our cover feature (p50). More shooting and editing techniques await you in Photo Active (p16), Camera Clinic (p72), and Practical Photoshop (p83), while Hotshots (p42) presents the world's best landscape photos. A trio of outdoor photographers is on hand to offer inspiration this month: Chris Burkard (p8), Jay Clue and Sam Glenn-Smith (p120). This month's camera reviews see the Fujifilm X100VI (p102) and Polaroid I-2 (p106) come under scrutiny, and new zoom lenses from Canon and Sony. Plus, subscribers can now access our digital back issues archive – find out more on page 63.

Enjoy the issue.

Niall Hampton, editor
niall.hampton@futurenet.com

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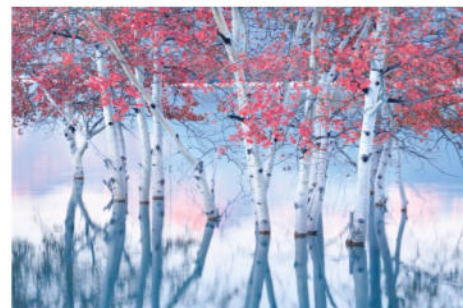
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30 WAYS TO SHOOT SPRING!



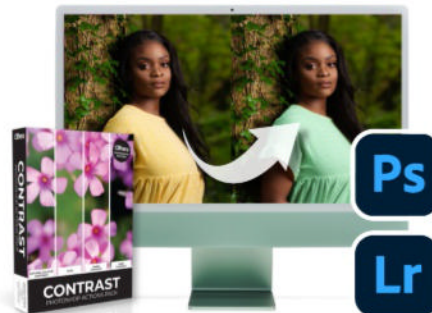
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ILLPOTY/Blake Randall

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Page 40 – subscribe today and get a **Lowepro Truckee SH120 camera bag!** **WORTH £27**



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Will Cheung



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Jay Clue



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Mark Bauer / RoddHoddmott



16 **Photo Active** _ 10 things to shoot, edit or create this month – from bagging beautiful butterflies, nailing perfect wedding confetti shots, strategies for capturing castles, and how to create depth in landscape photography

Chris Burkard



Chris Burkard
Adventure photographer

Photography has taken Burkard all over the world, with hard-to-reach and extreme locations a speciality. We speak to him about his latest book, *The Oceans*, from **page 8**

Will Cheung



Will Cheung
Photographer and writer

A fellow of the Royal Photographic Society and the former editor of many photography titles, Cheung is the man behind Camera Clinic, which continues on **page 72**

Simon Roy



Simon Roy
Wildlife & nature photographer

With a focus on garden wildlife and the relationship between people and nature, Roy has been highly commended in many photo awards. Find out why from **page 50**

Jon Devo



Jon Devo
Photographer & writer

Our resident tech columnist considers the latest developments in photography and digital imaging. Read his latest dispatch, about Generative AI videos, on **page 100**

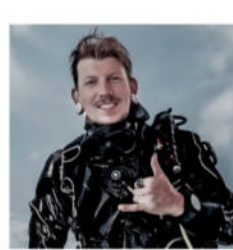
Jay Clue



Jay Clue
Underwater photographer

Based in Mexico, Clue's work is driven by a passion to inspire people to take action and protect the natural beauty of the world. We speak to him on **page 120**

Sam Glenn-Smith



Sam Glenn-Smith
Underwater photographer

Glenn-Smith hails from Victoria in Australia, where he loves to give diving instruction, work as a dive guide and practise his underwater photography. See it on **page 120**

Your gifts

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BONUS SOFTWARE EXTRAS!
Turn to page 90

15 ACTIONS & PRESETS

Give your shots a professional look with this month's batch of software extras for Photoshop, Lightroom and Camera Raw

We've curated another compelling batch of actions and presets this month. Turn to page 90 to find out more – 10 analogue-style profiles for Camera Raw, a colour change preset for Lightroom and four contrast Actions for Photoshop – and for the instructions for downloading and installing these powerful software extras



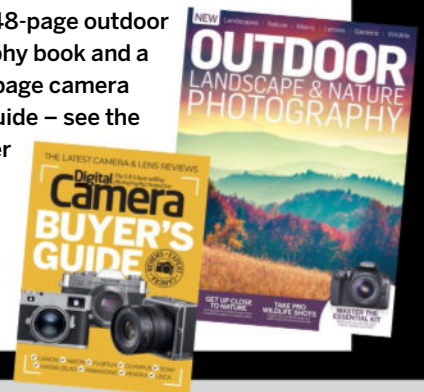
9 PHOTO TIPS CARDS TO TAKE ON LOCATION!

Our latest selection of tips cards gives wallet-sized advice on how to take better photos



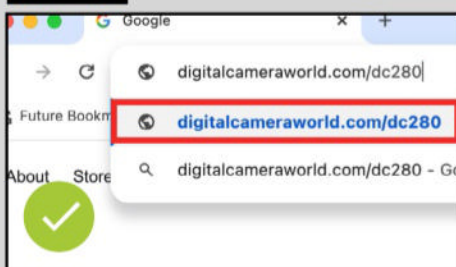
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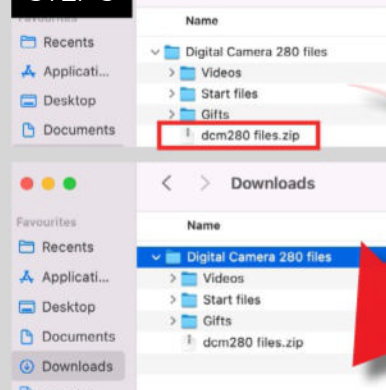
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Pro
in
focus



Paul Nicklen

Chris Burkard

The adventure photographer has a new book out called *The Oceans*. **Niall Hampton** discovers the stories behind the images and the author's relationship with the sea



Chris Burkard



Chris Burkard

Chris Burkard
Adventure photographer

A photographer, adventurer, creative director, speaker and author, Burkard has worked with many leading global corporations and international tourist boards. His books include *California Surf Project*, *High Tide*, *Under An Arctic Sky* and *Wayward*. Anyone keen to hear his take on the joy of surfing in ice-cold water should watch his Ted Talk on YouTube (www.bit.ly/dc249burkard). Burkard has completed assignments and expeditions in Norway, Iceland, New Zealand, the USA, Canada, Russia – and many other countries.
www.chrisburkard.com
Instagram: @chrisburkard



With an appetite for adventure, a can-do attitude and a 'have camera, will travel' philosophy, Chris Burkard is as much a force of nature as the subjects he documents. One of the world's leading adventure photographers, Burkard has been taking his viewers into far-flung and inaccessible parts of the world for a decade and a half,

raising awareness of the state of the planet and the effects of climate change. His main focus, though, is his first love – the sea. Whether on assignment shooting surfing and extreme outdoor sports for global brands or capturing images for his own portfolio, Burkard has a reputation for going the extra mile in every sense, braving uncompromising conditions for periods of time that would leave others in his wake. —>

Above: Iceland, Atlantic Ocean, 2016. Sony A7R II.



Chris Burkard

Above: Iceland, Atlantic Ocean, 2021. DJI Mavic 2 Pro.

Opposite page: Iceland, Atlantic Ocean, 2021. Sony Xperia.



I grew up by the ocean – it was a place where I had a lot of joy and where I found solace

With his latest book *The Oceans: The Maritime Photography of Chris Burkard* having been published at the end of last year, it felt like an appropriate time to ask the man himself about the story behind the book, and how it compares to his previous one, *Wayward: Stories and Photographs*, published in 2021, which he discussed in issue 249 of *Digital Camera*.

“The biggest difference is that *Wayward* was a bit more of a memoir, more of a story about my specific experience as a photographer and as a creative,” Burkard explains over the phone from New York City. “*The Oceans* is more of a love letter to this landscape, to oceans. And as somebody who grew up by the sea, at the beach, being by the ocean was more about circumstance than it was about anything else. It wasn’t so much that I would always seek it out, it was always there – at times, it was a babysitter and it was a friend. It was a place where I had a lot of joy and a place where I found a lot of solace during challenging times of my life.

“And this book was, in many ways, a love letter to that experience, something that I aspired to create for a long time. I’m aware that I don’t have as many images

of the ocean as I wish I had – I still don’t have photographs from every single body of water. Part of me always feels like I have to wait until something is perfect, but I decided to move forward with this project and wanted something to put out there to advocate for the ocean. I don’t know if this translates well, but this was really the impetus behind the book.”

Twin passions

The introduction to *The Oceans* anchors Burkard’s life story in California to the Pacific Ocean and he explains in moving terms how photography became a twin passion; he knew he would have to follow a career that allowed him to combine the two. It’s a heartfelt and inspirational piece of writing and it would be hard for a reader not to be moved by it.

“That’s the beauty of the ocean,” Burkard replies when I point this out. “It’s a canvas about which none of us will be able to say that we’ve seen it all, we’ve done it all... it’s a canvas that’s constantly going to show you different sides, different ways of seeing it, and this is what makes it special. To me, that is truly what I love

On board with...

Shooting the ocean

1 What to look for in a composition

"First and foremost, how can I bring the viewer into this scene, how can I give them the ability to feel like they're with me? That's a huge part of it. If I'm so obsessed with the artistry that I lose sight of giving the viewer an honest perspective, then that becomes challenging for me. Over the years, I have tried to become a little more aware of the viewer and aware of their perspective."

2 Simplify the process

"Simplifying the process is really important. You know the old adage about the best camera being the one you have with you? I don't believe that's true. I think the best camera is the one you're willing to pull out, the one you're willing to use. I've been in a beautiful area in a really remote location, but unwilling to pull out my camera because it was too cold or it was at the bottom of my bag."

3 Choose the tool that suits you

"Photographers nowadays have so many tools at their disposal... as well as mirrorless cameras and DSLRs, camera drones, camera phones and GoPros are all great for documenting what you see. The older I get, though, the less I feel I have to stick to a certain medium or format."

4 Make the most of camera tech...

"I would be lying if I said that technology has not helped play a role in what I feel I can create now. There was a time when I felt limited by camera technology, but the constant improvements in what cameras can do have made it a little easier to realise my creative vision."

5 ... but don't let it be the main focus

"We have access to so much technology, it's overwhelming. In many ways, it doesn't do us a service; in fact, having so much tech might even do us a disservice. I never like it when people feel in some way that they need technology to get the image. Of course, I feel that technology is a part of it – if it's for a specific image or a specific photo and it helps you tell the story you need, then it's a great tool to use. But I don't think the technology needs to become the singular focus."



Chris Burkard

about the ocean. I could go to my local beach every single day and see a different side to the ocean. So I guess in this regard, I'm not just a user of the ocean nowadays, but a steward of it.

"Being a steward looks like a lot of different things: it has looked like making books about it, it has looked like getting involved in environmental initiatives around it. I'm just starting to understand how I can be somebody who protects a place that I profess to love."

The Oceans features more than 220 photographs, one-tenth of which were taken after Covid-19 travel restrictions were removed. Does Burkard have any favourite photos, I wonder?

"Yes and no – I want to make sure I phrase this correctly because I don't want to give anybody the feeling that I'm a masochist and the only way I can create beautiful images is if I suffer. I do love the process of creating meaningful images,

powerful images, but that doesn't always mean that I have to suffer. I have found that, for me, making a good image is more about being fully involved in the process of taking it. You can't just phone it in – I'm sure you know that expression – because if I were to do that, the images wouldn't be as powerful, they wouldn't be as meaningful and they wouldn't really give me any joy.

"So, often I'm looking for work – 'scarred' is the wrong way of describing it; it's more like 'gives me a memory' – that gives me something powerful to think about and to play on. I guess I'm just looking for photographs that give me the ability to think back and remember fondly when I took them.

"That said, the images I had to work a little harder for are often more memorable. It doesn't mean that hard work is always a prerequisite to creating something good; I guess that's the thing



Chris Burkard

I want to make sure I get across, so I don't leave people feeling that it's crucial to suffer. Because I think that there's a lot of masochism within photography and I don't want to be somebody who says that suffering is the only way of being able to get good photographs."

Yet Burkard is well known for going the extra mile to capture his images, something that he talks about in his publications. In *Wayward*, Burkard recounts some of the stories from behind the scenes of his shoots – including succumbing to hypothermia, destroying thousands of pounds worth of camera gear and spending time in a Russian jail,

“
I've become a master of recognising special captures rather than shooting many frames

all in the pursuit of great photographs. With his knowledge and experience, though, does it ever get easier to capture memorable images when he has to push himself so hard in terms of endurance and making sure that he's in the right place at the right time?

"Yes and no," he replies. "While I haven't necessarily become more technical as a photographer, it never gets any easier. What has happened is at my stage and level of expertise, I actually shoot less and what I choose to shoot is a bit more surprising or unique. What I have become a master of, if anything, is recognising one or two special captures rather than having to shoot a million frames. This is due to having a tuned eye to what you want to shoot and what you need to shoot, and honing your craft."

Light work

Flipping through *The Oceans*, there are plenty of noteworthy new images, which Burkard is more than happy to discuss. Starting with the picture of a white house on the coast of Iceland, the sea heaves onto the ancient rocks and the whole scene is illuminated with an incredible light.

"That's the little house in Arnarstapi, a remote little village on the Snæfellsnes Peninsula in western Iceland," he says. "We were shooting some trekking along the coast. There's a beautiful coastal trail that winds through all of these cave systems and it's a unique little area. I've gone back to shoot that perspective multiple times, and it's a place that just draws you in. What keeps me fascinated with Iceland is the feeling that there is always more to photograph."

The light in this picture is very pleasing. I ask Burkard whether the conditions were so fleeting that he had to be careful – and quick – to capture such a wide range of tones in the image.

"Absolutely. In reality, I feel that any time the light is worth shooting, it's always going to be slightly fleeting – meaning that the clouds are moving and the sun comes out for just a few seconds. In fact, that's what I seek out in my work: anytime I'm shooting something that excites me, it's when the weather is inclement, when it's not a perfect scenario or ideal situation, when you usually have rainstorms and there's a little bit of chaos. I'm colour-blind, so I have always looked to →

Chris Burkard



Chris Burkard



In his own words

An extract from
the introduction
to *The Oceans*

“The ocean has always been a part of my life. When I was growing up, it was a friend, a babysitter, a playground, and a source of deep comfort. There are people who feel that way about the mountains, others who love to be surrounded by desert. For me, it’s where the land ends and there’s nothing else ahead of you for thousands of miles but blue water.

Living beside the ocean is a constant reminder that outside the door, there is a force that I’ll never be able to control. No matter how much I train or prepare, I’ll never be able to impose my will on this unruly body of water. You can’t force your way through a massive swell, a breaking wave or a rip current. In fact, the best thing you can do is learn to go with the flow. The ocean requires you to let go and when you let go of your fears, it can nurture you.

In order to build a life around the water, I’ve learned to interpret and understand the language of the ocean over the years. I’ve also learned to find peace in some precarious situations – because the moment you step into the ocean, you are in an alien world. You might as well be in outer space. You’re not in charge and you’re not even at the top of the food chain. We may think we’ve mastered the water, but the ocean has the power to instantly humble us.

This is something I’m profoundly grateful for because it constantly puts me back in my place: it breaks down my ego and my pride and reminds me of who I am and where I come from.”

This page, top: Iceland, Atlantic Ocean, 2021. DJI Mavic 2 Zoom.

This page, bottom: Iceland, Atlantic Ocean, 2018. Sony A7R III.

Opposite, top: Iceland, Atlantic Ocean, 2019. Sony A7R IV



Chris Burkard

Above: Iceland, Atlantic Ocean, 2012. Sony NEX-7.

Opposite page: Iceland, Atlantic Ocean, 2021. DJI Mavic 2 Pro.

“
Photography, at its core, is best used to share the beauty of our planet

capture contrast in my images, instead of complementary colours.”

There’s also an intriguing photo of three planes flying above what looks like the tendrils of some ancient and gargantuan plant that dominates the scene.

“I spent about seven years working on a personal project about Iceland’s glacial rivers, advocating for their protection and trying to create a national park. I used this body of work as a way to illustrate to people how beautiful these rivers are and how much they need them because often you simply cannot gain a perspective of their beauty from the ground.

“It took me going up in small planes, bush planes – that’s my [Piper] Super Cub. Typically when flying, especially if you’re flying in a remote area that’s inherently dangerous, you will have multiple people with you. And through that process, I realised that as powerful as my images of these rivers were, if they didn’t have a subject, then nobody could really tell what they were looking at. In fact, people might even think they were fake.

“So to me, this is the manifestation of that body of work and trying to create a perspective that will hopefully make

people inhale a little bit, like, ‘Wow, that’s incredible, I didn’t realise what I was looking at and now I do.’ And in my work, I’ve strived over the years to create that in everything, whether that’s shooting an athlete, shooting a plane or even shooting landscapes.

“Ultimately, the glacial floodplain is like a big flooded riverbed where glacial silt comes and spills out and that’s what gives you the colours; you’re looking down at glacial till, which is ground-up rocks and separate from the water and separate from everything else.”

Did it take a long time to get that shot, I wonder – and was it something that Burkard really wanted to capture that day?

“Going into it, I was aiming and hoping to give context and perspective to what I was shooting and to bring some kind of deeper understanding of that scenario. So it’s always a bit of a process. That’s why I think the biggest challenge for any photographer is striving to create a connection point with the people and the subjects you’re shooting, so that was what drew me into that image.”

Another new image pictures a sailing boat on a deep green sea in front of a



Chris Burkard

rugged coast that's disappearing into the clouds, which was captured using a camera drone. "This was shot in the western fjords of Iceland, in a remote national park called Hornstrandir in the north-west of the country," Burkard explains. "The idea behind that image was to capture the experience of what we were trying to shoot and, ultimately, the beauty of the surrounding landscape."

"I was on a boat that belongs to a friend of mine. He's a boat captain in Iceland called Bubi. He's a really amazing guy, probably one of the foremost explorers of that region. The location is incredible and I've been there many times. It is a place that truly feels significant and special, one of those locations that the more time you spend there, the more you realise the importance of advocacy work and why it's so beautiful to be able to protect that area and preserve it for future generations."

No turning back

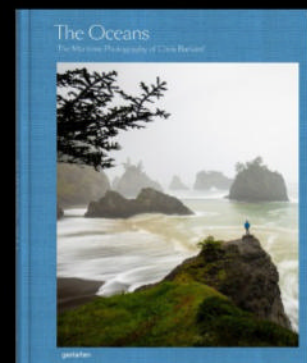
And in terms of having an environmental legacy to bequeath, does Burkard feel that the work of the photographers and conservationists who highlight the condition of the oceans and the

effects of climate change, such as himself, is making a difference?

"Absolutely! From day one, photography has played a role in that, for sure," he says. "I think that photography, at its core, is best used to share the beauty of our planet. However, I think that if anything, nobody should be trying to force-feed someone to care about a place – it's more about creatives showing our perspective and then letting people make their own decisions."

In his introduction to *The Oceans*, Burkard quotes the saying, 'Never turn your back on the ocean'. Given his passion for the sea, and his dedication to championing it, turning his back on the ocean feels like something that he's unlikely to do in the foreseeable future. "Of course not," he says. "That's the first lesson you learn and it's one that I've seen go very wrong as well, so I advocate for people to take the oceans seriously. That's one piece of advice and wisdom that I can't urge enough."

"But more important I think is learning to read the ocean and learning to be a student of the sea. It is a constantly evolving and beautiful location that can teach us so much. I just aspire to be an advocate for the ocean in everything I do." ●



Buy the book

The Oceans:
The Maritime
Photography of
Chris Burkard

Hardcover, 320 pages, published by Gestalten (ISBN 978-3-96704-126-2), priced at £55/\$80. Find out more at: <https://uk.gestalten.com>

Photo Active

10 things you can shoot, edit and create this month, from butterflies and castles to the perfect confetti shot

1 | LANDSCAPES

How to create depth

Mark Bauer and Ross Hoddinott explore another element of classic scenic shots

One of the biggest problems that landscape photographers face can be summed up quite simply: the world is three-dimensional but the medium in which we are trying to represent it has only two dimensions. One of the main reasons why landscape photographs fail is that they don't convey the sense of depth that we perceive when we view the scene in reality. Often, when we see a photograph that doesn't quite work and we say it looks a little flat, we mean it quite literally.

Fortunately, there are a few compositional and technical tricks we can employ to circumvent this problem and create the illusion of depth in a two-dimensional medium.

Foreground interest

One effective way to create depth in a photograph is to include a strong foreground element, often in conjunction with the use of

a wide-angle lens. Emphasising the foreground in this way adds depth to a picture by creating an entry point for the eye, pulling the viewer into the scene and providing a sense of distance and scale. This technique works particularly well with wide-angle lenses because of the way they stretch perspective, exaggerating the size of elements close to the lens and opening up the view beyond.

When using this technique, you will need to pay attention to what's going on in the middle distance, and also to the height of the camera. Because of the way in which a wide-angle lens can open up the planes in the middle distance, if you shoot from too great a height, there can be too much empty space in this area. The solution is to shoot from a lower viewpoint, which compresses the middle distance. Get too low, however, and you may find that there's not enough separation between objects in the middle distance,

Pro tip: Go wide

Using a wide-angle lens exaggerates perspective, enhancing the feeling of depth in a photo. It has the additional benefit of increasing the depth of field, helping to create front-to-back sharpness, which can also add to a feeling of depth.



PART
4 OF 6

Part 5 in issue
281, on sale
26 April



Camera settings: Canon EOS-1Ds Mark II, 17–40mm (at 20mm), 1/5 sec at f/16, ISO 100, polariser, 2-stop ND grad

or between the middle distance and the background.

It may sound like a straightforward technique, but to apply it well takes skill and attention to detail. Too often, photographers fall into the trap of sticking anything and everything in the foreground, regardless of whether it suits the picture or not, and ignoring the rest of the scene. It's worth spending some time finding foreground elements that complement the background and exploring different ways of relating foreground,

middle distance, and background to make a cohesive whole.

The right foreground

It's easy to allow a foreground element to become too dominant and small changes in your position can have a big impact. In the first picture (above), although the light is dramatic and reveals the texture of the foreground rock, the rock itself is badly placed in the frame, blocking the view of the middle distance. The second picture (opposite) demonstrates a much more considered use of the same

Camera settings: Canon EOS-1Ds Mark II, 17–40mm (at 20mm), 1/2 sec at f/16, ISO 100, polariser, 2-stop ND grad

BIG FOREGROUNDS

The 'big foreground' is a well-established look in landscape photography. It is, however, in danger of becoming a visual cliché and it's worth remembering that foreground interest doesn't have to be big to be effective. More subtle elements can work just as well, such as reflections in wet sand, the pattern of waves breaking on the shore, or the shadows cast by trees.





Layering light

For this shot of a hill fort, I set up my composition in anticipation of the sun breaking through a gap in the heavy cloud. When it arrived, the ridges and hilltops were lit, highlighting their form by leaving the valley in shadow and creating a layered light effect. **Camera settings:** Fujifilm GFX 50S, 55–110mm, 1/20 sec at f/11, ISO 100, polariser



Aerial perspective

Hazy or misty conditions are excellent for exploiting aerial perspective (see below) and creating a feeling of depth, especially if there is a degree of backlighting. **Camera settings:** Nikon Z 7II, 100–400mm (at 320mm), 1/25 sec at f/11, ISO 64

foreground rock – it frames the picture at the bottom, lines up with the peak of the hill in the background, and the lines pointing inwards at the bottom of the frame help to draw the eye into the picture.

Layers and planes

Another useful technique for adding depth is to create layers in an image. Layers can be formed by a series of overlapping shapes, or by strong side lighting, creating alternate bands of light and shade, giving a layered light effect. A layered look can also be

enhanced by aerial perspective, in which receding shapes, such as a range of hills, appear lighter the further away they are. This effect is especially noticeable in hazy, misty or foggy conditions.

This type of image works particularly well with longer lenses, which have the effect of compressing perspective and stacking overlapping forms to exaggerate the layered effect. If you are using longer lenses, remember that they have less depth of field than wide angles, so you may need to use smaller apertures, such as f/16.

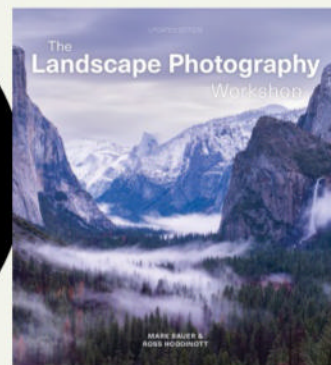


Using colour to enhance depth

In visual terms, warm colours advance and cool colours recede. We can use this to enhance the feeling of depth in a composition by placing warm colours, such as reds and oranges, in the foreground, and cool colours, such as blues and greens, in the background. The warm colours of the poppies in the foreground advance compared with the cooler greens in the background, helping to enhance the feeling of depth in this shot. **Camera settings:** Fuji X-Pro2, 10–24mm (at 10mm), 1/3 sec at f/16, ISO 200, polariser, 2-stop med ND grad

BUY THE BOOK

The Landscape Photography Workshop by Mark Bauer and Ross Hoddinott is published by Ammonite Press, priced £16.99/\$26.95.
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Whatever the weather

Are you a fair-weather photographer? **Mike Harris** shows us how to take great scenic shots in all conditions

When it's raining, it's tempting to stay at home but if you're willing to brave the elements, you'll be rewarded with some truly breathtaking landscapes featuring moody skies, concentrated rays of sunlight and even the occasional rainbow.

It's easy to assume that cameras and lenses featuring weather-seals, or those that are weather-resistant or dust- and drip-resistant (not all are), mean that your gear is impervious to the elements, but we can assure you it isn't. Dedicated rain covers can be bought online from companies such as Think Tank and you can get special, filter-cleaning spray bottles from companies such as Lee Filters that will tackle more stubborn deposits of rain.

Shooting in rain, fog or mist can create atmospheric photographs but with much less light around, shutter speeds can be perilously low when using narrow apertures. To stick with the aperture of choice, the only recourse is either to increase the ISO or, depending on exactly how long the exposure is and whether you have a mirrorless or DSLR camera, use a tripod. Also, colours often fall flat so you may require a Curves adjustment to put more contrast into the scene and a colour saturation increase to make them punchier. Another solution could be to convert your images to black and white and enhance them by adding noise for a gritty, retro-looking aesthetic.



Mike Harris

Protecting your camera

You can improvise a rain cover by cutting a hole in the corner of a large, plastic freezer bag and poking your lens through it. Water droplets can appear as blurry smudges on images, so carefully wipe the front element with a microfibre lens cloth.





EVERY 46 MINUTES

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If you go down to the woods...

Nigel Forster has some handy tips on how to frame and shoot trees and woodlands

No matter what the weather, rain or shine, there are always photographic opportunities to be found in your local woods, whether it's an ancient tract of gnarled oaks or a Forestry Commission plantation of pine trees. Woods present the photographer with the challenge of having to carefully manage light and shade, and the need to simplify an image to avoid potential clutter. One way of simplifying your woodland images is to look for simple patterns in the trees. Use the vertical tree trunks as a basic form for the image and look for a composition that uses the branches in an interesting way. nigelforsterphotography.co.uk



Combining tree shadows, bluebells and backlighting creates an effective image in this shot in the Usk Valley.

Shoot against the light

Woodlands can be cluttered and difficult to photograph well. One of the ways you can simplify your image is to shoot against the light and use the shadows of the tree structure as lead-in lines to draw your eye into the image. The backlighting is also excellent for contrast and colour saturation.

Create starbursts

An additional way to add interest to your image is to partially obscure the sun behind a tree branch and use a narrow aperture to create a starburst effect from the sun. Make sure you don't overexpose the light from the sun if your meter is reading off the shadow areas; it is better to underexpose, if anything, and bring back the shadow detail in post-processing.



Nigel Forster



Looking from outside

This image of larch trees in the Brecon Beacons was taken after snowfall in early spring, so the red colour of the new growth was beginning to show. I particularly like the curved branches that cut across the vertical trunks. You may need to take this kind of shot looking into the woodland from the outside, as in the woodland itself, other trees close to the camera will likely get in the way when using a long lens.

Larch leaves coming into bud create a red tinge at Hay-on-Wye in the Brecon Beacons National Park.

Nigel Forster

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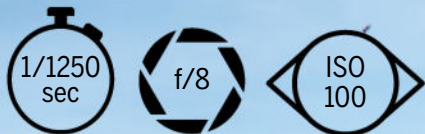
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4 | WEDDINGS

Capture confetti

Wedding photographer **Ben Davis** explains the timing and techniques needed to take the perfect confetti photo

With the rising emotions of joy, swirling colours and a flurry of smiles, the confetti moment is the quintessential photo from any wedding day. However, getting a good photo of the confetti moment can be a challenge. With petals tumbling in every direction, focus know-how, camera skills and split-second timing are required to capture the perfect shot.

5 tips for capturing confetti

1 Use a zoom
To capture a range of perspectives as the happy couple walk towards you, a zoom lens is best. Something like an 18-55mm kit lens on a crop-sensor or a 24-70mm on a full-frame camera will be ideal.



2 Capture a burst
You'll want to use Continuous shooting mode, allowing multiple frames per second to be captured. With the fluttering confetti at the whim of the breeze and the fleeting nature of this moment, it's best to shoot as many images as possible.



3 The need for speed
To freeze all the unfurling motion of the flower petals flying from fingertips, you will need a fast shutter speed of at least 1/500sec. In bright lighting conditions, it may need to be even faster for a balanced exposure.

4 Fix your focus
It can be challenging to remain accurately focused on the newlyweds. A continuous tracking mode with a single point focus is generally best, but pause the tracking whenever petals are at their peak to avoid focusing on foreground details.

5 Choose your depth
A really shallow depth of field is often used with wedding photography but an aperture of f/5.6 or even f/8 is a better choice for capturing confetti photos.



Ben Davis

HOPE AND HOMES FOR CHILDREN



URGENT APPEAL



Russia's brutal invasion of Ukraine is not just a humanitarian crisis for the Ukrainian people; it's a child protection emergency.

Up to 100,000 children warehoused in Ukraine's vast orphanage system – a network of over 700 buildings – risk being forgotten. Left to face the dangers of war alone as staff flee. As families are torn apart or forced from their homes, many more children are at risk of being separated from the love and protection they desperately need. Worse still, they are at risk of trafficking, or being placed in overcrowded, understaffed and poorly resourced orphanages in border countries.

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Defender of the crown

Wendy Evans explains how to capture historic castles – without deploying trebuchets and storming the walls

Although there have been hillforts and defensive enclosures in the UK since around 900BC and the Romans built Hadrian's Wall with small forts placed at regular intervals, it wasn't until the Normans arrived in 1066 that the era of stone castle building really began. Since then, over 1,000 stone castles have been built to protect towns, secure strategic locations and project power to subdue restless natives.

These days, you can find these castles in various states of repair, from intact buildings and restored interiors, showing how the rich and powerful lived and exercised control over their domains, to crumbling, moss-covered ruins, now a shadow of their former glory.

For the photographer, that means a wealth of opportunities are available – from capturing the castle within the landscape itself, to ornate interiors, dismal dungeons and even medieval re-enactment events.

Castles were usually built to defend a region, a town or an area of strategic importance, so the best way to approach the subject is to place the castle within the context of the landscape it was defending. When shooting in landscape orientation, classic composition rules are a good place to start. The castle is usually located on the highest land in the area, making it easier to use the rule of thirds to place the horizon on the bottom-third horizontal line or, if there is interesting content in the foreground,

on the top-third horizontal line. Line the castle up with the left or right vertical third to place it on a key focal point.

A standard wide-angle lens of 28mm is a good place to start if you have unfettered access to the site, but sometimes it's a case of having one place to shoot from and then zooming in to compose the scene effectively so a 28-70mm short telephoto is a handy lens to pack. With plenty going on in the scene, you'll want as much depth of field as possible, so set the aperture to f/16 or f/22, and then focus at the hyperfocal distance for the lens at that aperture – about one third of the way into the scene.

If you're shooting from a distance and have placed the horizon on the bottom third →

Getty





A classic dusk shot of Conwy Castle in Wales, with the bridge leading in and the town lights glowing in the background.

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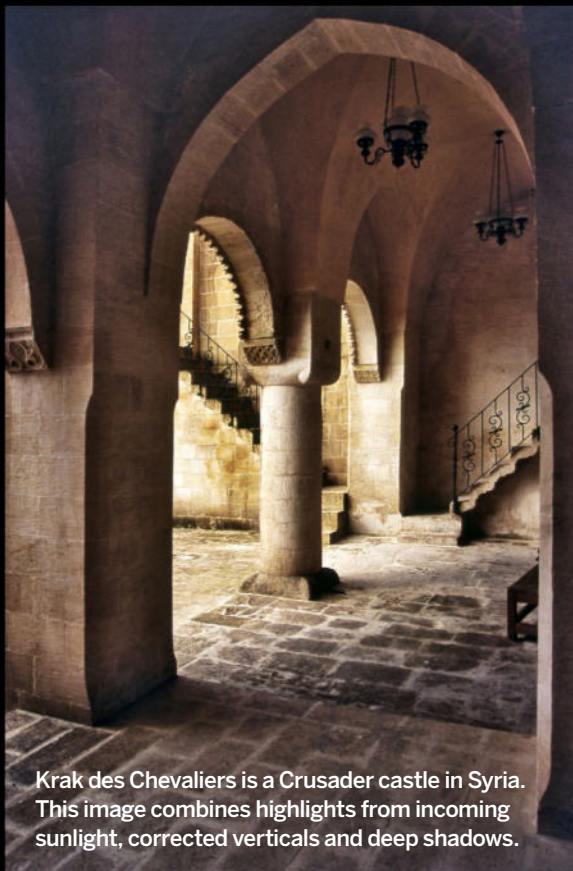


Shooting the interiors

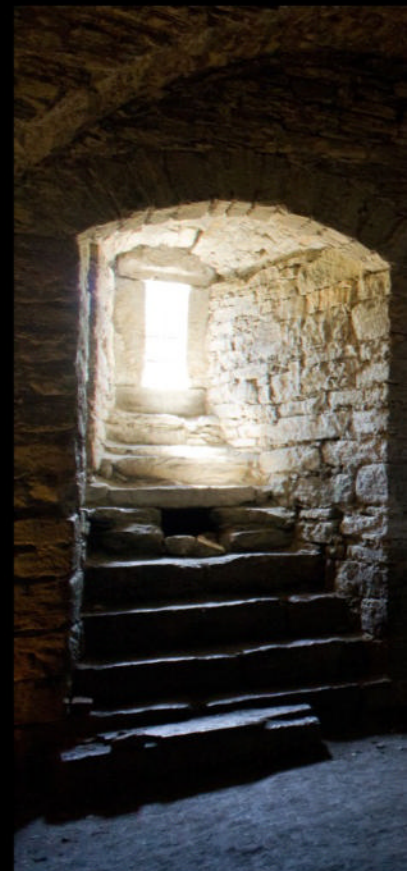
Inside the castle, a different set of challenges emerge, usually revolving around the lack of available light. Using a tripod is often not an option and for the casual visitor, flash is also generally prohibited, so you will need to increase the ISO rating. You can set your camera to Auto ISO but I prefer to tackle each scene on its own merits and only increase the ISO to the amount I need to get the photo.

Inside, you will normally shoot with a wide-angle lens, so there's more depth of field, and as long as you don't include what's right at your feet, there should be enough sharpness at most apertures. Any verticals nearby will be distorted, so try to keep away from walls, unless you are deliberately emphasising this by shooting upwards to show the scene bending away from the camera. The main issue is the shutter speed and what you can realistically shoot hand-held. The type of lens and camera will help, but it's your call.

Where the light really becomes a challenge is if you head for the dungeons, kitchens or storerooms. For areas that lack any kind of set decoration, then it becomes an exercise in looking at shapes, lines and areas of light and dark. Even with a maximum ISO that you're happy with, it's going to be tough shooting in low light so it's worth looking for places to rest the camera or support your hands. Now focus on the brightest parts of the scene so they are well exposed, even if everything else is thrown into shadow.



Krak des Chevaliers is a Crusader castle in Syria. This image combines highlights from incoming sunlight, corrected verticals and deep shadows.



→ horizontal, the immediate foreground is likely to be excluded. In this case, try an aperture of $f/8$ or $f/11$ where the lens tends to give sharper results. Where the choice of aperture and focus distance becomes more crucial is when shooting a vertical composition with a lot of foreground detail, leading up to the castle at the top of the image.

Sometimes, the castle was built to defend a settlement, which over the years has grown so that it now surrounds the original fortification. In this case, access can be restricted so try to compose your image with lines that lead through the frame, making sure that you aren't simply standing right in front of the castle, looking upwards.

If you're shooting in Program mode, keep an eye on the shutter speed. There may be enough light during the day to shoot handheld, especially if you are using a mirrorless camera or with a stabilised lens, but as it gets later in the day, towards sunset or dusk, a tripod is usually required. While early morning or late afternoon light is often best to shoot

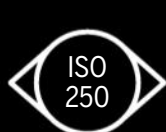
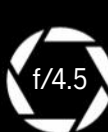
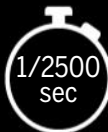
It's jousting time

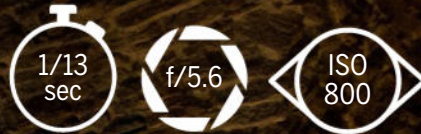
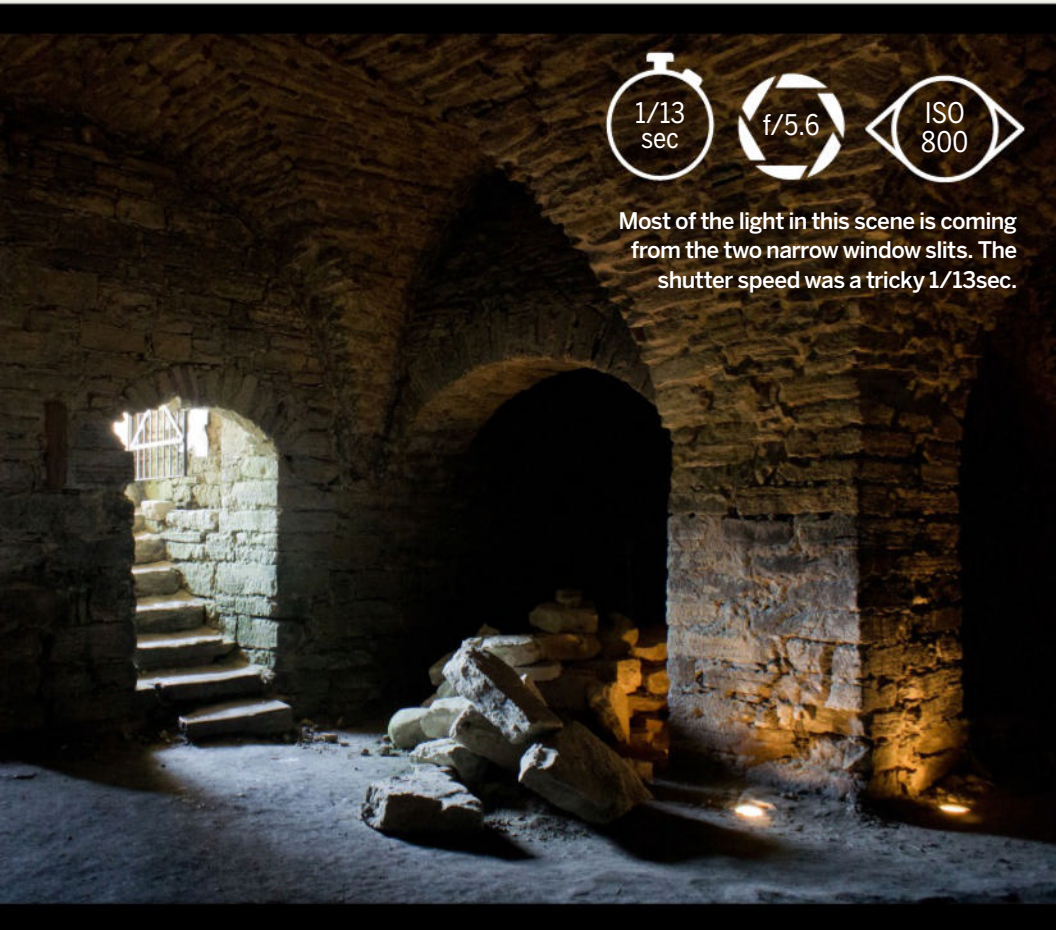
Jousting, cooking, crafts, falconry, people in suits of armour – these are all things you can encounter if the castle owner is putting on a special event. Although you might be there for a classic landscape shot, don't pass up the opportunity for additional captures. Here, the subject can change to portraits, action shots or macro, so the techniques and lenses required are quite different.

The key is to plan ahead, so you know what is going to be happening while you are there and pack your gear for any additional photos you may want to take. Looking for some portrait shots of grimy peasants being oppressed by corpulent nobility? Take your 50mm prime lens and open up the aperture. Want to capture jousting knights or warriors engaged in a fight to the (simulated) death? Then it's time for a 200mm telephoto lens (right).



To capture action like this, you need a fast shutter speed, so dial in a wide aperture and increase ISO if required.





Most of the light in this scene is coming from the two narrow window slits. The shutter speed was a tricky 1/13sec.

Try these settings

In Aperture Priority mode, set the aperture to f/16 or f/22, the ISO to 100, and keep an eye on the shutter speed to avoid camera shake



Try a custom white balance setting to ensure warm tones on the stonework or to counter early morning blue tones in the shadows



Getty

stonework, as you head towards sunset, balancing the exposure becomes more problematic, with much more light in the sky than there is in the ground areas.

One solution is to use the exposure bracketing method, where you expose for the sky, then for the ground and combine the images later in post-processing. Another option is to use your camera's HDR mode to capture a greater tonal range than usual. The traditional method is to use a graduated ND filter and line it up with the horizon to reduce the strength of the light in the sky.

Something else to keep an eye on is the white balance. Late afternoon sun on stonework can give great results with warm hues, but the camera's Auto WB may cancel this out. Shooting in raw format gives leeway to tweak this, but a manual white balance of 4,000-4,500K should preserve those golden tones.

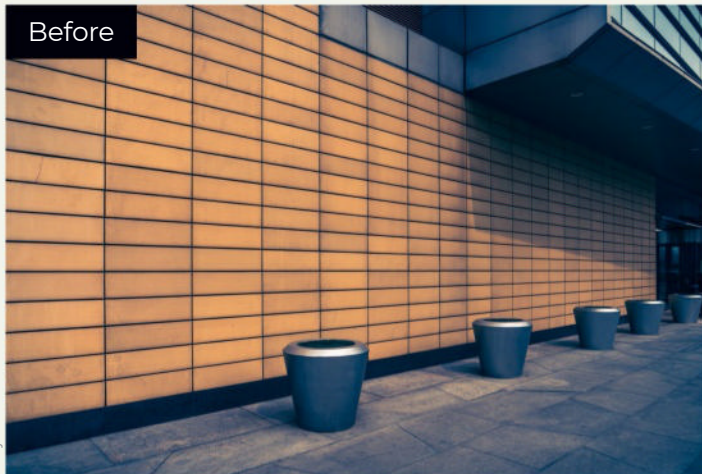
With many castles being open to visitors, they often have artificial lighting to make them stand out once the sun goes down. Where this really pays dividends is if the castle is situated next to water. Here, you will have the lovely blue tones in the sky and water being offset by the yellow-orange glow of the artificial lighting on the castle.

Try converting to mono

Note the positioning of the lake shore on the bottom-third compositional line and the castle itself on the right-hand vertical third, facing into the expanse of water. Then see how your daytime images look in mono with a B&W conversion. In Photoshop, go to Image > Adjustments > Black & White and select the Red filter preset, then tweak the Red/Yellow channels so the highlights don't overexpose.



Wendy Evans



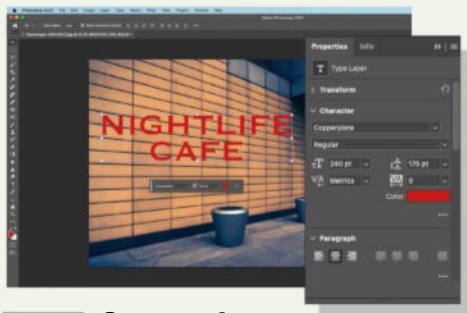
6 | PHOTOSHOP

Keep it in perspective

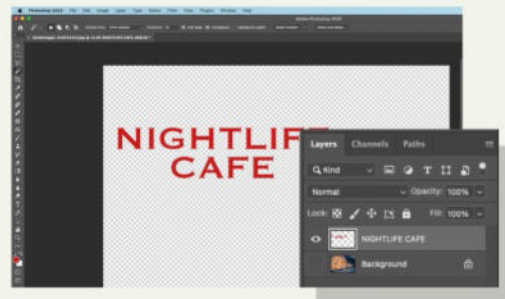
Wendy Evans explains how to use Photoshop's Vanishing Point tool to accurately add signs to an angled flat surface

The standard method of adding text or any kind of graphics, to an angled surface in Adobe Photoshop is to paste and use the transform tools to try to scale it properly. This has an element of hit and miss and if you find the text needs resizing, then the chance of being accurate diminishes with each adjustment.

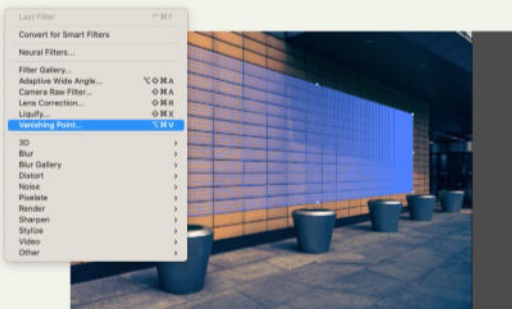
The good thing about using the Vanishing Point tool is that it works equally as well for text as it does for any graphic element, such as graffiti. In this example, we're adding a sign to an outside wall, but you could equally add graffiti to a street wall. With Photoshop's Generative Fill, you don't even have to draw the graffiti either, it can create it for you.



1 Create the text
Load the background image and create a new blank layer. Select the Type tool and select the font and colour you want. Write out your text and set the spacing accordingly if it's over more than one line.



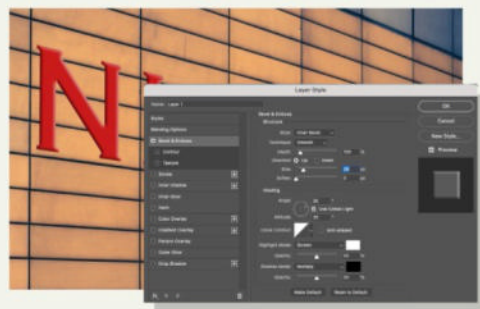
2 Rasterize the text
Right-click on the text layer and select Rasterize. Any graphic element has to be rasterized before it can be used on the Vanishing Point layer. Select the actual text and press Cmd-C to copy to the Clipboard.



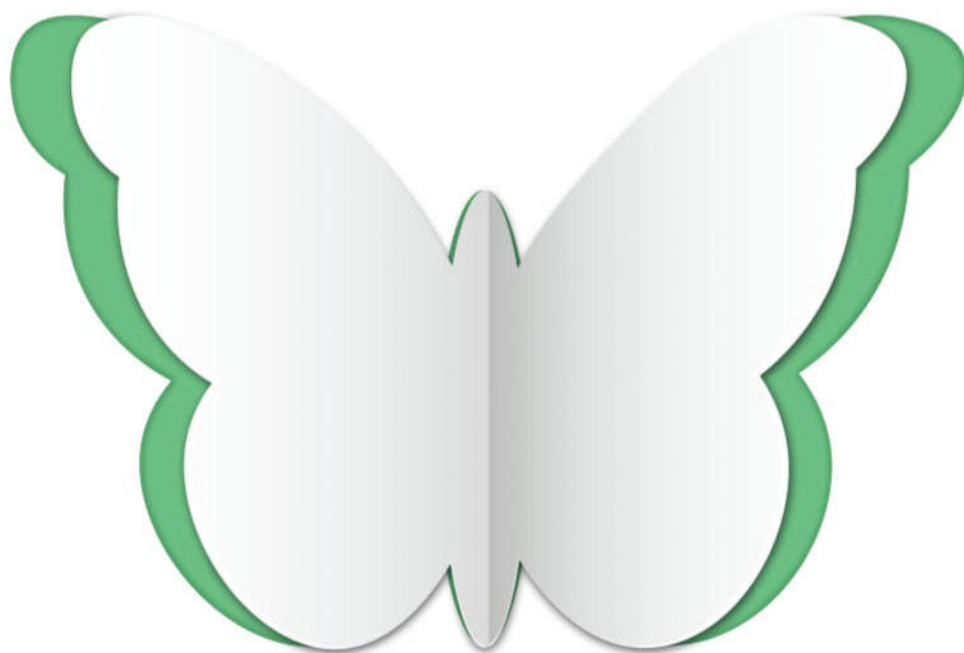
3 Create the grid
Delete this text layer and add a new blank layer. Press Cmd-D to remove the selection outline. Now go to Filter > Vanishing Point. Click to add the four corners of the selection area, following the angled shape of the wall. You can make any adjustments to the grid, move it around and so on. The selection area turns blue when the perspective is correct.



4 Scale and fit
Press Cmd-V to paste your text into the grid. It will appear at the top left of the window but if you click and drag it over the perspective grid it will now scale accurately. As you move it along the way, it will get smaller the further away it moves. If the text doesn't fit, select the Transform tool on the left and resize accordingly. Click OK when it's done.



5 Finishing off
Add finishing touches like embossing to make the sign stand off the wall (select the Layer Style icon in the Layers Palette), add a drop shadow to match the shadows in the scene and use a Stroke outline for added emphasis. Alternatively, change the layer blend mode to Darken to make the text look as though it has been painted onto the wall.



PAPER & BIODIVERSITY

Forests cover 31% of the world's total land area and contain most of the world's earthly biodiversity. To ensure the long-term health of forests, the European paper industry counts on sustainable forest management as a source for its main raw material.

Source: FAO and UNEP, The State of World's Forests, 2020



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It's butterfly season

Wendy Evans puts aside her net and jam jar in favour of capturing butterflies the ecologically friendly way – in photographs

Photographing wildlife successfully can be a tricky business, requiring plenty of high-end equipment, but there is one type of fauna that is much easier on the wallet and that comes in the form of butterflies. From March onwards, the 58 species of UK native butterflies begin to emerge for the warmer weather and they stick around until October and November when it starts to get frosty again. Attract them to your garden by planting flowers that they like to feed on, while you lay in wait with

your camera. Some of the best flowers to plant include Buddleia, with its upright foliage offering purple and lilac colours; Echinops, which feature spiky, blue balls; Cornflowers with compact, bushy plants that host large, deep blue flowers; and not forgetting the orange hues of Helenium for later on in the season.



1 Get set up

Unless your aim is to capture a group of butterflies in the flowery environment, you will need a macro lens. A longer macro lens, such as 70-105mm, will enable shooting from further away and won't disturb the butterflies. Even longer, non-macro, lenses can be used from greater distances, but you may need to crop the final image.

2 The best times of day

Any sunny part of your garden will attract butterflies, but late afternoon sunshine is ideal as it provides golden hues for the background. Aim to get set up at ground level where the flowers are. Shooting in mid-to-late afternoon means any dew on the ground will have evaporated by then.


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Want to feature in our gallery? Please email a high-res image (at least 2.5MB) marked 'Reader Images' and including a title and brief description to:

digitalcamera@futurenet.com

or share it on Instagram with the tag:

[#digitalcameramag](https://www.instagram.com/digitalcameramag)



A 70mm lens was used to capture this butterfly feeding from a distance without disturbing it. The f/4 aperture meant that the flowery background was rendered as a blur of colours.

3

Focus on a flower

Compose the image with a particular flower in mind and wait for a butterfly to arrive. In this case, you can pre-focus on the flower and switch to manual focusing for minor adjustments – and you can also use a tripod. Alternatively, you could wait until you see the butterfly and then use a single focus point to lock on to it.

4

Try these settings

A wider aperture will render the ground as a swathe of colour and enable a faster shutter speed. With plenty of light about, there should be no need to increase the ISO significantly. Centre-weighted metering tied to the focus point should balance the exposure for the insect, as a bright background will otherwise underexpose the butterfly.

5

Use a telephoto lens

An alternative to using a macro lens is to use a telephoto lens of 200mm or longer because this compresses the perspective and has a shallow depth of field. You will need to switch the autofocusing to a single point and direct it at the plant or butterfly – or use manual focusing to ensure that this is in focus and not some random element in the background.

**PART
1 OF 4**

Part 2 in issue
281, on sale
26 April

8 | PHOTOSHOP

Expand your horizons with AI

Wendy Evans explores some of the possibilities afforded by Photoshop 2024's new Generative Fill tool



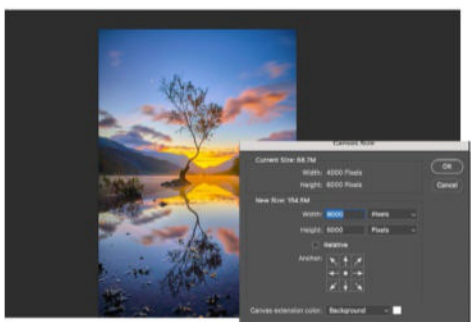
Have you ever taken a scenic photo in portrait orientation but later thought it might have been better in landscape format? Sometimes, it's just interesting to see what new versions of old images you can create. That's where Photoshop 2024's new Generative Fill tool can come in handy, adding realistic content to enhance an image or give it a different perspective.

Previously, Content Aware Fill could be used to expand the canvas of a photo but it was limited because it was generating the image

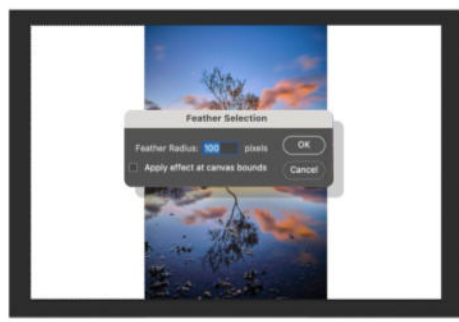
extension directly from elements in the image itself. It couldn't create new content and the larger the canvas extension, the higher the possibility of generating repeating patterns.

Generative Fill differs in two ways: firstly, in that it can fill much larger areas; and secondly, the new content it creates is derived from AI calculations and not the original image. We'll take a closer look at the possibilities in the next part of this tutorial but, meanwhile, we have this image of a tree in a lake taken in portrait orientation. What would it look like as a landscape image? Let's find out.

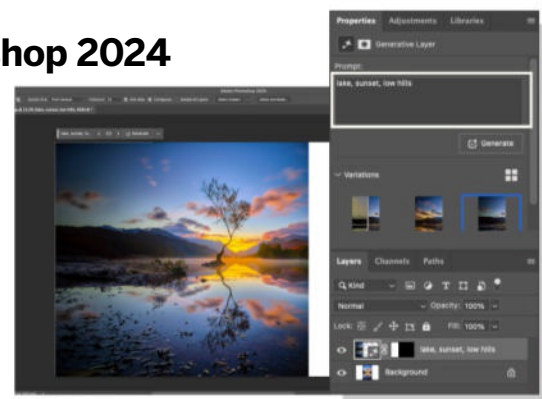
How to add extra content with Generative Fill in Photoshop 2024



1 Expand the canvas
Firstly, increase the canvas size to the new format by going to Image > Canvas Size. The original was 4000 x 6000px, so enter the new values of 9000 x 6000px to create two blank panels on either side of the image. Select the Magic Wand tool and click on the white area at the left select it all.



2 Feather the selection
Go to Select > Modify > Feather and enter a value of 100 pixels. A feathered edge helps blend the new content with the old. Ensure that the box to apply the feathering along the outside boundary is not selected, so only the right side of the selection is being feathered.



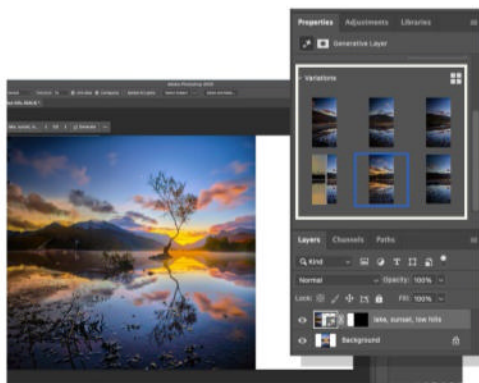
3 Create new content
At this point, the Contextual Task Bar should appear. You can also go to Edit > Generative Fill. Now, like Content-Aware Fill, you can just hit the Generate button and it will create new content based on what's in the image. However, you usually get better results by spelling it out.

Photoshop's AI-driven Generative Fill allows portrait-orientation photos to be extended into landscape orientation in six steps.



Getty

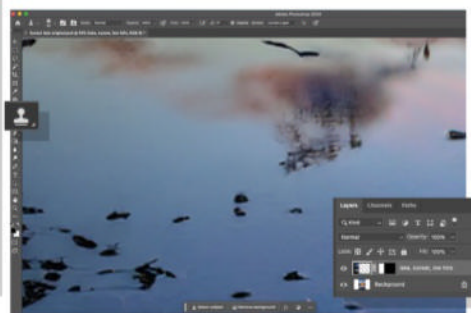
After



4

Look at the variations

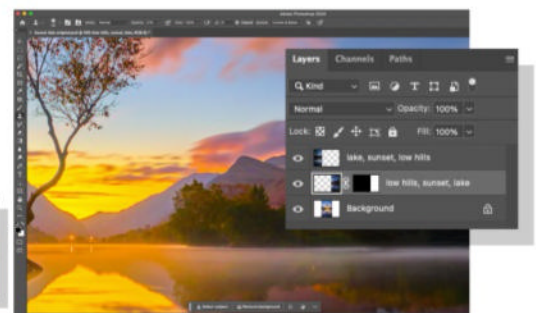
In the Contextual Task Bar, you can click on the arrows to scroll through three versions of the new content to see which one works best. If you don't like these versions, hit Generate to create another set of three. Also, look to the panel on the right where there are thumbnails of all the versions.



5

Select and blend

Find one you particularly like, checking for any errors and matching brightness. Select the new layer and use Image > Adjustments > Curves to match the exposure more closely. Use the Clone Stamp tool to remove any errors (you'll be prompted to rasterize the layer first).



6

Finishing up

Select the original layer and repeat the process for the right side. If you need to clone over the boundary edge between the new content and the original image, select the new content layer, the Clone Stamp tool and tick the box for Sample: Current and Below. Merge the layers and save.

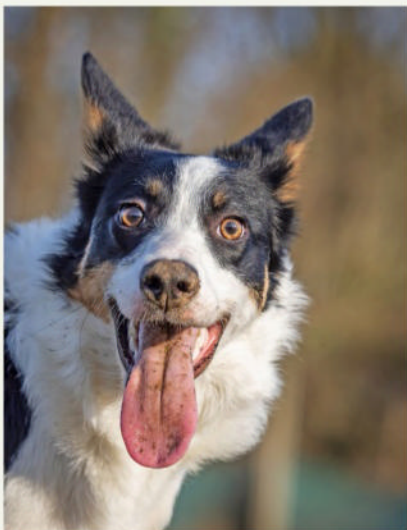
Out with the paw patrol

Ross McLaren explains how to capture the expressive nature and character of your pet dogs on their daily walk

Having fallen in love with photography through my underwater work, I had been looking for another outlet that we could enjoy together as a family and one that was a little less wet. I'm not sure that dog photography quite fits the bill of being drier, especially when I find myself lying on the beach or in a muddy

field trying to get the shot, but it's certainly something we've been able to enjoy together during our family days out. There are some incredible pet photographers out there for inspiration, but you don't have to be a professional to be able to shoot photos that really capture the unique individual character of man's best friend.

Instagram: @r.s.mclarenphotography



Ross McLaren



1 Candid shots

I like to capture the raw, candid moments when I'm shooting. Those facial expressions the dogs pull in a split-second as they are running or enjoying the open air really highlight their personalities. This isn't easy, though, and takes a lot of trial and error because their expressions can quickly change.

2 Get on the level

Don't be afraid to get down and dirty! Descending to dog level will really enhance your shots and help to convey the speed of the dog's movements. It also means you can clearly see when a dog is airborne in mid-stride as there's an obvious gap between their galloping feet and the ground.

3 Try these settings

Getting to know your camera is important so that you can make adjustments on the fly. I always shoot in Manual exposure mode but, in practice, I really only alter my shutter speed. Starting off at 1/2000 sec with the aperture set to around f/4 and Auto ISO (with a maximum limit of ISO 3200), it's only a quick turn of a dial to change the shutter speed or aperture, if required, while the camera takes care of the ISO.



4 Burst mode

Being able to shoot up to 10fps (mechanical shutter) and 18fps (electronic shutter) on my Olympus OM-D E-M1 Mark III comes in handy for photographing dogs. It does feel a bit 'spray and pray' at times, but it certainly helps capture the split-second moments that you would miss when shooting single images.



Be card sharp

If I'm heading out to take shots of dogs, I like to start with an empty memory card. It's amazing how quickly they start to fill up when you're shooting in burst mode and there's nothing worse than running out of space just as I'm starting to hit my stride. For best-buy memory cards, go to: www.bit.ly/dcm280 bestsdcards

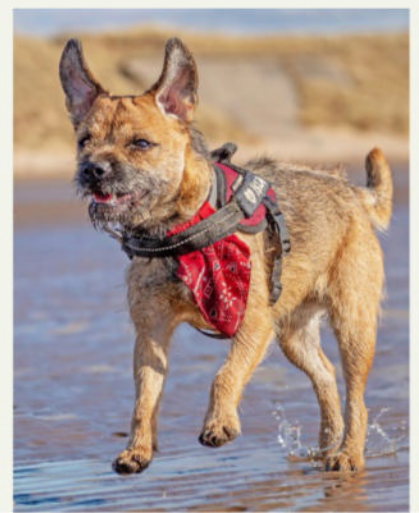


Ross McLaren

5

Shoot fast

With dogs running around at high speed, you really do need a fast shutter speed to freeze the movement. If the area has water, like on this beach, the fast shutter speed also means that any splashes will be frozen in place as well. If you're struggling with the focus point, make the aperture narrower, to more like $f/5.6$ or $f/8$, and see whether Auto ISO has enough leeway to keep the image properly exposed.



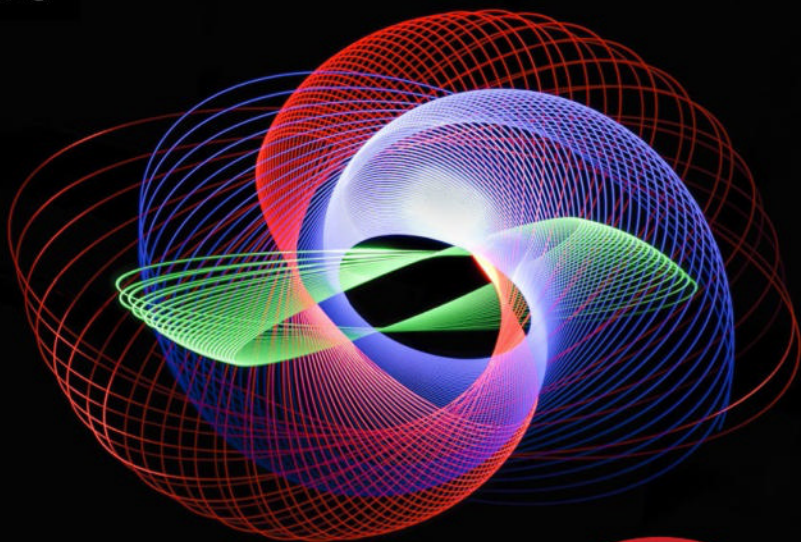
Ross McLaren

The winner of the 'Shapes' challenge is...

Penny Simpson

In *Digital Camera 278*, we challenged our readers to submit an image that best encompassed 'shapes'. The winning image was this colourful spirograph, which was created by hanging a coloured torch from a conservatory ceiling on a dark night. It was taken on an Olympus OM-D E-M1 Mark II using Live Composite mode, which allows the image to be viewed as created. The blue image was created first, then the camera was covered, the torch colour changed and re-swung to draw the red image. Finally, the process was repeated for the green image. Excellent shot, Penny!
Settings: 1 sec at f/10, ISO 64

Penny Simpson



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Submit your best 'Symmetry' photo by midnight on 25 April 2024

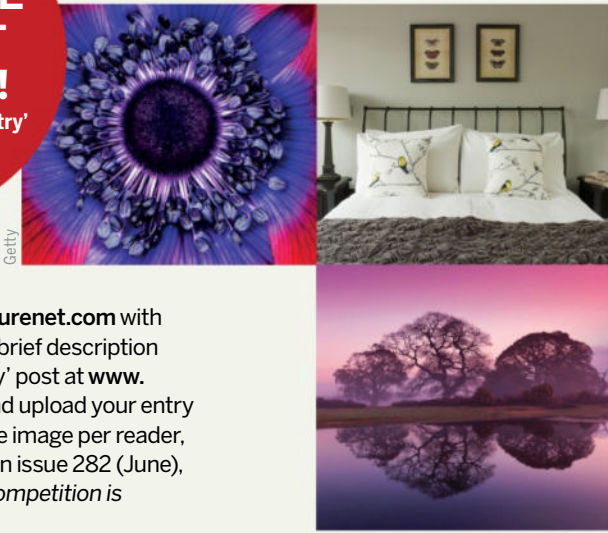
10 | COMPETITION

'Symmetry' photo challenge

The latest theme of our monthly photo challenge is 'Symmetry' – so whether you enjoy taking photographs of people, architecture, water features or urban scenes, we want to see an element of symmetry. How you interpret the brief is up to you, but send us your best shot!

Enter via email or Facebook

Email your entry to digitalcamera@futurenet.com with 'Symmetry' as the subject, including a brief description of the image. Or look for the 'Symmetry' post at www.facebook.com/digitalcameraworld and upload your entry into the feed. Enter by 25 April (only one image per reader, please). The winner will be announced in issue 282 (June), on sale 24 May (Please note that this competition is only open to readers based in the UK).



Email your entry to: digitalcamera@futurenet.com
 or enter at: www.facebook.com/digitalcameraworld

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How do you approach capturing the essence of a place within a limited amount of time? It's an interesting question to ponder...

reds, pinks and yellows, the bright, intense and harsh light, and the splattering of dust on the old car all express my impressions and feelings about the place. The subject matter is almost, but not entirely, irrelevant but that also plays into the sense of the place, even through close observations.

These images will be part of a big project I've mentioned in this column before; the working title is 'In Between'. I already have too many images, yet I am compelled to make more, so much so that I'm starting a Master's degree in photography shortly to help me make sense of it all – and (hopefully) many other exciting things. You're never too old for school! ●



Benedict Brain
www.benedictbrain.com

Camera: Fujifilm GFX 50R and GF45mm F2.8 R WR
Exposure: 1/125 sec at f/11, ISO 100

The art of seeing

Seeking a sense of place, **Benedict Brain** captures the vibe of Mexico in a diptych

How do you capture a sense of place in a still photograph? I constantly ponder this question as I travel the world. Generally, I am left with more questions than answers, but that's good. I often find that the most interesting photographs also ask more questions of the viewer than they present answers, so it seems apt.

Most of the time, I experience new locations in fleeting moments. Due to the nature of the way I travel, I don't have time to make deep connections or get to know a place. Typically, I will wander aimlessly with my camera, a lens (35mm equivalent) and a flashgun, wandering down streets

that look interesting or sticking in my nose (and lens) into this and that. The limited time in which I have to work forces me to operate quickly and intuitively. I've grown to like working this way, although it's not without its frustrations. The fleeting impression I get builds into my sense of place; I have taken to honing in on small details, little corners and vignettes of life, drawn to the mundane and turning my back on the epic tourist vistas.

This image is from Mexico and, to me, there's something unquestionably Mexican about it. I've spent some time in Mexico over the years, and this pair of images, presented as a diptych, captures the vibe. The colour palette of

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DIMENSIONS

Internal dimensions
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External dimensions
15 x 13.5 x 19.5cm

Hotshots

Winning images from the International Landscape
Photographer of the Year competition 2023

WINNER:
Photograph
of the Year
'Fire and Water'
Blake Randall,
Canada

"A stunning lake
in the Canadian
Rockies."

Location: Abraham
Lake, Alberta,
Canada.

i





Blake Randall/ILPOTY





Jim Guerard/ILPOTY

i

**WINNER: Black and White Award
'Morning Light'**

Jim Guerard, United States

Taken on a Sony A1, 2 sec exposure at f/8 and ISO 100. **Location:** George L Smith State Park, Metter, Georgia, USA.

i

**WINNER: Photographer of the Year
'A Land Within'**

Tony Hewitt, Australia

"Red soil left behind from a larger tide forms a red ring around a dryer patch of sand." **Location:** King River Tidal Plain, Wyndham, Western Australia.





i

**WINNER: Seascape Award
'Turned To Stone'**

Ciaran Willmore, Ireland

"A long-exposure shot while keeping the detail in a stream that leads the eye towards the petrified Witch and the Giant."
Location: Tjornuvik, Streymoy Island, Faroe Islands.

Ciaran Willmore/ILPOTY

Hotshots

i

WINNER: Snow and Ice Award
'Austfonna Ice Cap'

Thomas Vijayan, Canada

"This image is a composite of 26 frames, artfully stitched together to immortalise the transient beauty of this natural wonder."

Location: Svalbard, Norway.



Thomas Vijayan/ILPOTY

WINNER: Desert Award
'Arita'

John Seager, United Kingdom

"This is 'El Cono de Arita', a spectacular geological formation shaped by erosion that sits alone in a vast salt desert."

Location: Salar de Arizaro, Salta Province, Argentina.

i



John Seager/ILPOTY



i

**WINNER: Aerial Award
'Arc'**

**Casey McCallister,
United States**

"Birds on the shoreline
of a local lake."

Location: Boulder,
Colorado, USA

Casey McCallister/ILPOTY

About the competition

Now in its tenth year, a total of 4,035 entries were submitted to ILPOTY 2023. Photograph of the Year (a single shot) and Photographer of the Year (a portfolio of four images) each win \$10,000 in cash prizes. Winners of the five special subject awards receive a one-metre print from high-end photo lab and framer, Created For Life. The Top 101 entries will be included in the ILPOTY 2023 book. www.internationallandscapephotographer.com

THE INTERNATIONAL
LANDSCAPE
PHOTOGRAPHER OF THE YEAR



30

TIPS FOR SHOOTING SUPER SHOTS THIS

SPRING

Pro photographer **Simon Roy** reveals his key techniques

Spring is a time of new beginnings as nature slowly awakens. As the temperature rises, seeds and bulbs that have been buried for months now appear as flecks of green shoots and buds. With courtship underway, old partnerships and rivalries are resumed – love and war in mother nature.

For me, this is the best time of year to be out with a camera; a chance to reflect and

refresh, to rekindle old projects or begin new ones, and to remedy mistakes or build upon successes. It can be demanding, too, as the days and foliage get longer; walking, stalking, or waiting for hours, calling on old instincts and fieldcraft skills.

Spring has all the ingredients needed to capture dramatic, commercial and even award-winning images. Courtship displays, territorial disputes, sibling rivalries, nest building, parenting, predation, tenderness,

aggression, birth and death. With forethought and persistence, this can be the most rewarding season for a wildlife photographer.

Rising early is essential to witness the best of a spring day, to glimpse a barn owl as it ghosts over a meadow or to watch the sunrise through cobwebs laced with dew. To walk by a river where only a dipper has been or stand alone in woodland with the sound of a dawn chorus and the fresh scent of a new day – this is the essence of spring.

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Start early

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Plan your shots

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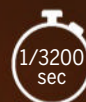
How to use fieldcraft

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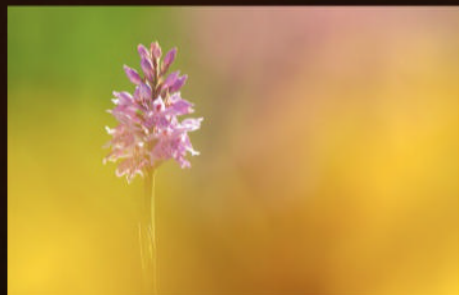
USE YOUR FREE TIPS CARDS

This project features in this month's bonus tips cards. For a handy guide to capturing creative photos like this, keep your tips cards in your camera bag.



PRO SHOT Swooping owl

This stunning barn owl hunting in a meadow after sunrise was captured with a super-telephoto 500mm lens and a fast shutter speed. Shot from a distance, the sunlight shining on the owl's wings against the dark backdrop creates a strong image.



Action and behaviour **page 58**



Creative photography **page 60**



How to edit your shots **page 62**

PART 1

START EARLY

Plan ahead and get up before sunrise to make the most of nature's calendar

Many of my spring projects are conceived over the winter when I find myself looking forward to warmer days. By planning ahead, I hope to take advantage of the conditions and maximise opportunities. As part of the process, I make a detailed list of shots, with the subject, location, light, backgrounds, time of day, composition, aperture, shutter speed and white balance. I also consider safety, ethics, access and consent.

Follow nature's calendar

Many of spring's highlights are spread throughout the season, allowing me to create a timeline and work through it systematically. During early spring, I often walk along small rivers, hoping to see a white-throated dipper, an aquatic songbird with a preference for clean, fast-flowing upland streams. These beautiful wooded valleys are best visited before deciduous trees put on their summer coats.

Mid-spring is all about bluebell habitats and the wildlife they sustain. These flowers thrive in ancient woodland and appear in April and May, but they are only in peak condition for a few weeks, so there's a small window of opportunity. The later part of spring sees wildflower meadows brimming with insects and blooming flowers. Butterflies are cold-blooded and rely on thermal energy to heat their flight muscles, so the best times to photograph them are at the beginning and end of the day. Mornings are more productive as you can arrive early and find the best specimens before the temperature rises.

TUTORIAL SPRING PROJECT IDEAS

Here are three examples of projects that can be planned over the course of the spring season. This is a great way to build a varied portfolio of different species, colours and techniques. I like to focus on one subject at a time and be patient until I get the desired light and weather conditions



A roe doe walking through spring bluebells. Taken with a Canon EOS 7D Mark II and Canon EF 500mm f/4L IS II USM.

1

KIT TIP

SUPER-TELEPHOTO

This image was captured with a Canon EF 500mm f/4L IS II, a pro-grade lens that allows the photographer to work from a distance that won't disturb their subjects. To see our best-buy super-telephotos from across the camera market, which are available at a range of price points, visit: www.bit.ly/dcm280telephotos



Simon Roy

2

In April... Shoot birds in blossom

A handsome male greenfinch amongst blackthorn blossom. I tempted the bird into position by placing a feeder of sunflower hearts nearby but just out of shot. I had pre-composed the scene using a single AF point; thankfully the greenfinch landed in exactly the right place. It was purposely framed to include the foreground foliage with a relatively wide aperture to isolate the main subject.

Camera: Canon EOS 5D Mark III and Canon EF 500mm f/4L IS II USM.
Exposure: 1/250 sec at f/5.6, ISO 100.



A white-throated dipper on a rock in a fast flowing upland stream. Canon EOS R6 and Canon EF 500mm f/4L IS II USM, 1/640 sec at f/4 and ISO 1000.

5 WHAT TO LOOK FOR THERE'S ALWAYS SOMETHING TO SEE IN SPRING

Walk by a river to enjoy the sound of running water and the sight of a white-throated dipper bobbing up and down on a rock or plunging into the flow. Explore farmland to see boxing brown hares and roadside meadows for bunnies and butterflies. Or visit a woodland from April to late May and witness the magic of bluebells in bloom up and down the country.

Simon Roy

Simon Roy



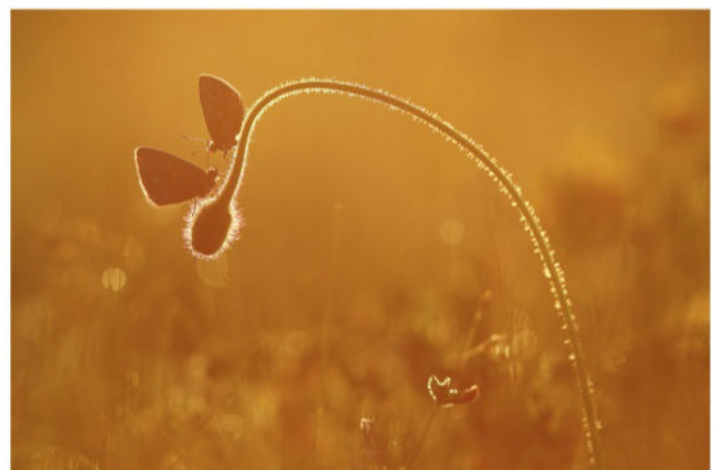
Simon Roy

3 In May... Focus on bluebells in bloom

A single bluebell flower photographed just after sunrise in the long grass at the edge of a woodland path. I composed this scene using the rule of thirds and shot from a low perspective to include the drops of backlit dew. This was taken using a 300mm lens and a wide aperture to make the flower pop and enhance the background bokeh.

Camera: Canon EOS 5D Mark III and Canon EF 300mm f/4L IS USM.

Exposure: 1/250 sec at f/4.5, ISO 160.



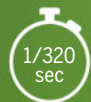
Simon Roy

4 In June... Butterflies at dawn

A pair of common blue butterflies resting in a roadside meadow, backlit by the rising sun. This was shot using a telephoto lens so that I could isolate the main subject and blur out the surrounding foliage. I also used a lens hood to help reduce glare and a manual white balance of 6000K to boost the warm tones.

Camera: Canon EOS 5D Mark III and Canon EF 300mm f/4L IS USM.

Exposure: 1/1000 sec at f/4.5, ISO 200.



PRO SHOT Kingfisher fishing

I only had the top section of this lovely split cane fishing rod so I fixed it to a pole to get it in the right position. I carefully set this shot up but the female kingfisher hadn't read the script (left). Eventually, it all came together resulting in one of my favourite kingfisher images... oh, the best-laid plans!

PART 2

MAKE A PLAN

A behind-the-scenes look at some of my most successful spring images and why they work

Many of the wildlife pictures featured in magazines or the final stages of photography competitions are the result of a well-executed plan. Even seemingly spontaneous moments are likely to have been achieved through patience and perseverance rather than simply being in the right place at the right time.

For me, this planning stage is a fun and fundamental part of the picture-making process. It allows me to be more productive when I'm not behind the camera, and more effective when I am. Here, I showcase a few of my most successful spring images and explain the stories behind them and the equipment I used.

Simon Roy



BEHIND THE LENS SIMON'S SUCCESSFUL SHOTS

Simon picks three of his favourite spring images, explaining his approach to capturing great shots and why these images work. Spring is the time to capture bright colours and brilliant behaviour, so add some pleasing depth of field and framing for highly commercial and potentially award-winning images



6 Make the most of lighter evenings: Spring bunnies

The lighter evenings of late April are a great time to explore areas of grassland in search of juvenile rabbits. A few years ago, I discovered a site next to a small country lane. On my first few visits, I spent some time watching the rabbits and clearing the area of dead leaves and litter. This allowed me to capture the image I wanted of a pair of wild bunnies together. **Camera:** Canon EOS 7D Mark II and Canon EF 500mm f/4L IS II USM. **Exposure:** 1/160 sec at f/5, ISO 400. Gitzo Series 3 tripod, scrim net



PRO KIT 5 THINGS YOU NEED FOR A SPRING SHOOT

The essential camera gear for successful seasonal wildlife photography

- 9 Camouflage covers and clothing are essential for photographing wary subjects in their habitats.
- 10 A super-telephoto lens – I use a 500mm f/4 – is a highly effective tool for all types of wildlife photography.
- 11 My Vanguard Spirit ED 8x42 binoculars are useful when tracking animals such as roe deer.
- 12 I support my Canon EOS R6 and lens with a Gitzo GT3542LS Series 3 tripod, or a bean bag.
- 13 Spare batteries and memory cards are important accessories when out in the field.



7 Consider background colour: Singing the blues

I regularly visited this glade of bluebells in search of roe deer and often had a wren for company. It used a stem of dead bracken to perform a territorial display. Set against the sea of blue flowers, I knew it would make a decent image so I constructed a makeshift hide and returned the following day. The wren appeared, landing on its perch and bursting into song.
Camera: Canon EOS 7D Mark II and Canon EF 500mm f/4L IS II USM.
Exposure: 1/160 sec at f/5.6, ISO 320. Gitzo Series 3 tripod, scrim net



8 Set up a scene: No fishing

I wanted this image to look as authentic as possible so I decided to build the sign myself from old bits of wood and made a paper stencil to create the text; I even brushed some tea over the white paint to give the letters a more weathered appearance. I then spent all day in a hide waiting for the perfect moment: the kingfisher with her prize, facing into the frame and everything on the same focal plane.
Camera: Canon EOS 5D Mark III and Canon EF 500mm f/4L IS II USM
Exposure: 1/640 sec at f/6.3, ISO 400. Gitzo Series 3 tripod, wooden hide

Simon Roy

PART 3

HOW TO USE FIELDCRAFT

How to track wary subjects or capture more natural behaviour

Fieldcraft, the skills needed to find, approach and photograph subjects, is one of the most important tools in wildlife photography. It includes the ability to track animals in their natural habitat without them being aware of your presence. With mammals that have a superb sense of smell, such as red foxes, badgers and roe deer, I shower without shampoo and wear clothes that are clean but not freshly washed. I camouflage myself and my gear, using trees and foliage to blend in. A few years ago, I discovered a fox earth in a local woodland. I

then spotted a dog fox with a large prey in its jaws and followed him cautiously, staying downwind as he dropped the kill at the den. I saw some movement and was amazed to see five little cubs above ground in broad daylight.

This area gave me the best chance of a good shot whilst maintaining a respectful distance. I returned a few days later and moved as silently as possible to my chosen position. I waited for hours behind some dead bracken, then glimpsed a cub in front of me. I lined up a single focal point over the right eye and captured one of my favourite images.

PRO ADVICE FIELDCRAFT BASICS

A little fieldcraft can make a big difference in spring

14

Having a basic knowledge of fieldcraft will get you more opportunities and better images. Always try to wear clothing that matches the environment you are working in; this includes gloves, a hat, and a cover for your face. Keep noise to a minimum and, as most mammals have a powerful sense of smell, avoid anything with a strong scent.



TUTORIAL DISGUIISING THE HUMAN FORM

Many wild animals have an instinctive fear of humans and even the very best camera and super-telephoto lens will be insufficient if the species you are trying to photograph feels threatened by you. Try to wear muted colours, move slowly, and be as quiet as possible. I also use a scrim net to fade my form, even in the garden where the birds are less wary



15

Stay low

Stay low so you don't stand out against the skyline – animals regularly scan the horizon for signs of danger. This also ensures you are at eye level with your subject, leading to more intimate pictures.



16

Blend in

Try to use camouflage such as lens covers and scrim nets to help you and your gear blend in with the surroundings. Covering your hands and face is also advisable for wary subjects.



17

Be quiet

Animals such as hares, rabbits and deer have superb hearing. Try to be as quiet as possible and tread carefully, using other sounds such as bird song, running water or even vehicle noise to mask your footfall.

© Simon Roy



1/400
sec

f/5.6

ISO
500

PRO SHOT Fox cub

This wild red fox cub among the bluebells of a woodland was captured with a Canon EF100-400mm f/4.5-5.6L IS II USM lens. The encounter was the result of days of observation, planning and fieldcraft.



18 Use a hide

A hide allows you to capture images showing natural behaviour, with minimal disturbance to your subject. The main function of a hide is to disguise the human form, with shelter and comfort being secondary needs.



19 Be creative

Often the best solution, especially in urban settings, is to conceal yourself in a building and shoot through an open door or window. You can also use a vehicle, which often makes an effective mobile hide.



20 Paid hides

There are now many well-established hides available for hire and these can be a great way to work with elusive species or fill gaps in your portfolio. Many RSPB centres and wetland centres also provide hides.

PART 4

ACTION AND BEHAVIOUR

Capture action and behaviour to give your images the wow factor

If you want to have your shots published in magazines like *Digital Camera* or for them to succeed in competitions, then try to capture moments rather than just pictures. Dramatic images of common subjects will often surpass simple portraits of more exotic species.

Animal behaviour may be organic, such as sleeping, grooming or fighting, or it might be contrived by the photographer, for example, a squirrel jumping to reach inaccessible food. Investing time in a subject will increase your understanding of it, and the more at ease an animal is, the more likely it is to behave naturally.

One of my favourite behavioural images shows a pair of adult little owls greeting each other on an old wooden gate. The shot was taken from a hide where I'd been feeding the owls and although both birds visited regularly, they rarely perched together. I spent many days in the hide waiting for this moment. Occasionally, you get lucky and happen to be in the right place at the right time; but an opportunity means nothing unless it is taken. Last spring I was photographing a pair

of juvenile rabbits just outside their burrow. One of the kits became restless and dropped into an entrance hole then almost immediately jumped back out, landing on its sibling before running away. Suddenly a stoat emerged from the same hole, glanced at me and then chased after the poor rabbits. I had a split second to focus and frame the shot.

Action photography often requires greater technical skill but produces more dynamic images. A barn owl diving, for example, will typically be chosen over a shot of the same bird perched. Many commercially successful wildlife pictures show animals interacting with man-made objects or exhibiting anthropomorphic behaviour, with human traits.

21

TOP TIP BE A NETWORKER!

Keep up with the latest sightings of spring wildlife by joining online photographic communities. You will be able to meet like-minded photographers in your local area and beyond, which will give you the opportunity to develop your skills. Plus, you can follow wildlife, wetland and woodland centres on social media to get up-to-date information about what you can photograph and where.

TUTORIAL HOW TO CAPTURE ANIMAL BEHAVIOUR

Capturing action and behaviour often requires greater technical skill and subject understanding. A mirrorless camera with its silent shutter, super-fast drive modes and autofocus capabilities is a huge advantage. For flight or other action shots, I tend to shoot wide open and aim for a shutter speed of around 1/3200, adjusting my ISO to achieve the desired exposure



22

Shooting action photography

A stunning barn owl diving for its breakfast at sunrise. Using a fast shutter speed and frame rate to freeze the action, I also underexposed to darken the tones and composed with active space in front of the bird. The owl hovered a moment, allowing me to anticipate the dive.



23

Understand behaviour

A handsome stoat emerging from a rabbit burrow. I was fortunate to witness this behaviour and only had a moment to react. The silent shutter and subject AF capabilities of my mirrorless camera really helped capture a moment I might otherwise have missed.



Think about... subject interaction

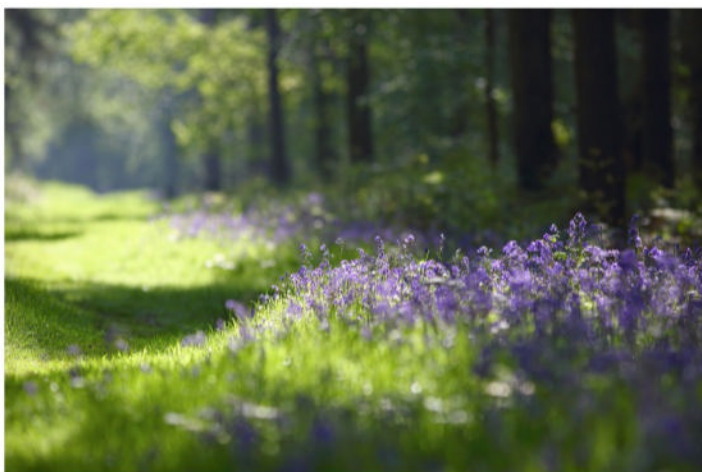
A pair of adult little owls greeting each other on an old wooden gate. This image was all about patience and perseverance; waiting for the moment when these two owls came together.



Simon Roy

PLANT BEHAVIOUR HOW TO CAPTURE IT CREATIVELY

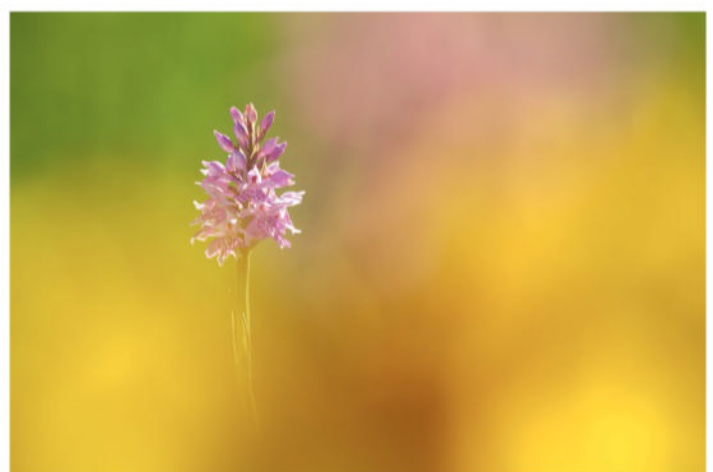
Spring is a fabulous season for capturing plants. With the warmer weather and more sunlight, many plants are coming into bloom, adding some colour after the dreary winter months. You can check online, and search locally to see what areas have an abundance of plants, such as bluebells in April. If it's breezy, check you have an appropriate shutter speed for sharp shots



24

Capture the surroundings

Don't always zoom in to take pictures of plants – sometimes it can be good to step back and try to capture these plants in their surroundings, too. This capture of these bluebells in the morning light, actually shot with a 300mm lens, really captures the mood.



25

Creative depth of field effects

You don't always need a macro lens to take 'close-ups' of flowers. This wild orchid, captured with a telephoto lens and a wider aperture, gives a narrow depth of focus, resulting in this fantastic depth of field effect that makes the orchid stand out against its surroundings.

PART 5

CREATIVE PHOTOGRAPHY

How to add some creativity to your spring wildlife portfolio

Having a good understanding of your camera and the basic elements of photography is fundamental for shooting more creative images.

Controlling the aperture is a great way to create drama and I will often use props to enforce the narrative in my pictures.

At my old house, a family of bank voles was living in a flower bed beneath the bird feeders. By understanding the voles' routines, I was able to predict when they would come to feed and this led to some great photographic opportunities. As is often the case with wildlife photography, the challenge became how to capture my

subject in an interesting way; I did this by using different props and backgrounds. I found that the voles liked chopped hazelnuts and these were a vital ingredient in many of my successful images. Even in the shot of a vole feeding on discarded apples, the animal has been tempted into position using hidden treats.

TUTORIAL USE PROPS TO IMPROVE YOUR IMAGES

The creative use of props is a great way to strengthen the story in a photograph or even alter it completely. Here are some ideas for shots that can be achieved in spring



Simon Roy

26

Think about storytelling

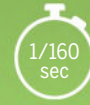
In this shot, called 'Blue', a blue tit lands on a clothes peg. Captured during lockdown, it took a week to get the shot. I wanted all the elements to be sharp so they occupy the same focal plane.



27

Try to create a habitat

A wild bank vole looks out from a pile of chopped larch. It took several hours to construct this habitat at a local woodland and I shot it in portrait format, as I felt it added to the sense of scale.



PRO SHOT Apple vole

A tiny wild bank vole feeding on discarded apples. Canon EOS 5D Mark III and Canon EF 300mm f/4L IS USM. 1/160 sec at f/5, ISO 400.



TUTORIAL UNDERSTANDING COLOUR AND LIGHT

A good understanding of colour and light will lead to more harmonious images

The two photos below were captured in my garden and show a goldfinch amongst spring blossom. They illustrate how light and contrast can influence the balance and harmony of an image. Many of my favourite photographs have quite neutral colours and tones, allowing the main subject to stand out



Simon Roy

28 Hard light and contrast
For me, this image lacks subtlety, because the light is too harsh and there is too much contrast between the pink flowers and the green background. It means the frame is too busy and the bird is a bit lost.

29 Soft light and harmony
For this image, I created my own background by painting an old fence panel that was positioned behind the flowers. It was taken on a cloudy day and the soft light complements the pink pastel colours.



Original image



Final image

PART 6

HOW TO EDIT YOUR SHOTS

Boost your spring captures with some quick editing tips in Photoshop

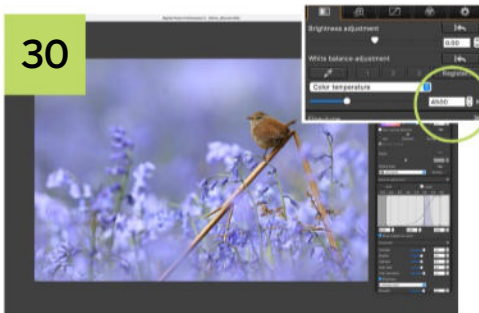
I am a big fan of Photoshop and feel it is an important tool for the digital photographer. Having said that, I believe you should always try to make the best image possible in-camera and only use editing software to enhance good shots and not to fix bad ones.

Using this strongly composed image of a wren sitting amongst bluebells, I had achieved most of what I wanted in-camera but felt the image could be improved with a quick edit. After some tweaks in Photoshop, the edited image is lighter, sharper, and more vibrant. Here, I'll show you how I achieved the look...

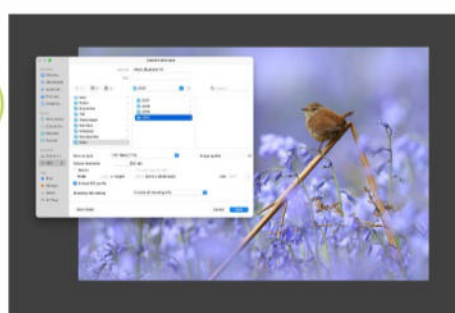
TUTORIAL **LIGHTEN SHADOWS AND ADD VIBRANCE**

Six quick and easy steps using Photoshop to make your wildlife image stand out from the crowd

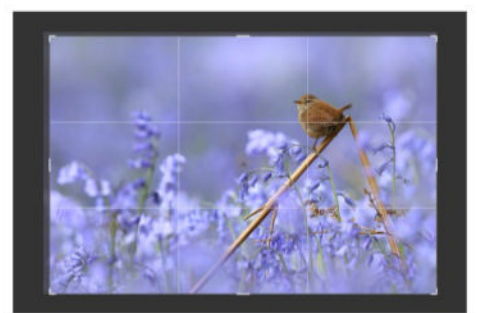
30

**Adjust the white balance**

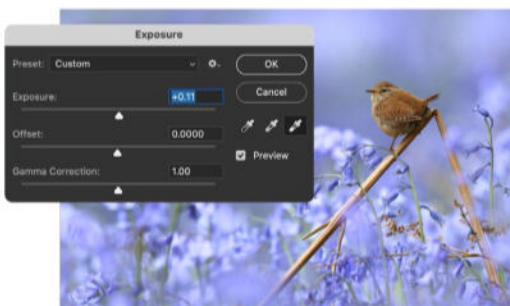
First, I opened the raw file in Canon DPP. The colour temperature was a little warm, so I adjusted the white balance to 4500K.

**Convert to TIFF**

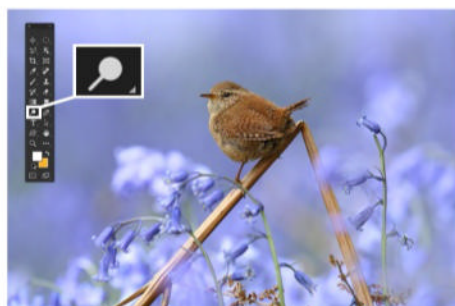
The next step was to convert the raw file to a TIFF format ready for Photoshop. I always keep both raw and TIFF versions of my images.

**Make a small crop**

Next, I opened the TIFF file in Photoshop and checked the framing. I only made small crops to maintain the original 3x2 aspect ratio.

**Exposure adjustment**

I was happy with the composition but felt that the image was a little darker than intended so I adjusted the Exposure to lighten the scene.

**Dodge tool**

One of my favourite tools for making exposure adjustments to specific areas is the Dodge tool. Here, I used it to brighten around the bird's eye.

**Sharpen up**

Although the image was already quite crisp, I wanted to add a bit more definition. I did this using the Unsharp Mask filter in Photoshop.

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Reader gallery

Digital Camera readers show how they've been getting creative, submitting images across a range of genres

1 'The Wheel of Light' by Geoff Chalmers

"I took this four-second exposure of the Wheel of Light in Leeds using a Sony A7R IV with a Sony FE 24mm F/1.4 GM lens on a tripod. I like the mix of colours in the wheel and the sense of movement from the light trails of the traffic; I was trying to balance the light from the wheel with the light trails from the moving traffic. It was a challenge to expose correctly as the wheel was changing speed, and so was the traffic. It was fun to explore the range of colours and light trails by experimenting with long exposures."

Instagram: @geoff.photos

Digital Camera says:

Choosing to shoot this image with a long exposure has given it great clarity. The lights from the wheel, the light trails and the starbursts on the streetlights, produced by using an aperture of f/11, have all combined to make this shot an explosion of colour.





**READER SHOT
OF THE MONTH**

Geoff Chalmers wins a year's
subscription to *Digital
Camera* for this image.
Well done, Geoff!

Reader gallery

2

'Volo Bog' by Scott Daniels

"This image was shot at the Volo Bog State Natural Area, the only open water quaking bog in the state of Illinois, USA, on an OM System OM-1 with an Olympus 9-18mm f/4-5.6 lens at 9mm (18mm equivalent in full-frame terms), set at f/5 in Aperture Priority, and ISO 200. The image is a composite of four overlapping raw frames taken over a 180° arc and stitched together in Lightroom; the shutter speeds range from 1/500 sec to 1/640 sec. The reflection of the sun surrounded by floating leaves guides the eye to the surrounding golden tamarack trees, framed by the brilliant blue water and the cloud-filled sky."

Digital Camera says:

Scott has blended four shots together to produce a stunning panorama. The circular bog with the reflection of the clouds and contrasting trees, as well as some foreground interest, make this a fine example of photo stitching.



3

'Cheetah' by Grant McElhinney

"On a recent trip to the UK, I visited Longleat Safari Park. I had booked the Big Cat Photo Tour, which is an amazing way to get up close to lions, tigers, cheetahs and wolves. We toured the various enclosures of these animals in a Land Rover with the

windows open and had free rein to photograph them. This female cheetah was relaxing inside a large hollow log and caught my eye. One of her cubs was just a few metres away lying in the grass near the log. Taken with my Pentax K3 III at 463mm; exposure 1/320 sec at F6.3, ISO 3200."

Digital Camera says:

We love the direct eye contact and the superb range of tones in this portrait. The contrast of the cheetah against the softer background really focuses the attention on the cheetah's markings. A stunning capture from the window of a Land Rover!





4 **'Thirty Years!'**
by Pauline Graham

"I took this photo in my little home studio using a Rococo backdrop I bought from clubbackdrops.com, two strobe lights with large softboxes to keep the shadows soft and my Lensbaby Sweet 50 lens. I chose an aperture of f/2.8 to achieve the overall softness and glow – I love the dreamy blur

this created. My upcoming 30th wedding anniversary was the inspiration for this image so I placed the soft pink around the gold wedding rings in the foreground to convey the dreamy 'in-love' emotions that brought us to the occasion. The simplicity of the image with the focus on the rings conveys the reality of the commitment."

Instagram: @paulinegrahamimages

Digital Camera says: We love to see readers inspired by the techniques in our Photo Active section, such as issue 278's Valentine's Day project. This is a beautiful shot with a gorgeous focus and combination of colours. The creative decision to make a heart out of the book's pages makes this one of the best Valentine's Day images we received.





5 'Beuzec Cap Sizun at Sunset' by Jerome Columbo

"Beuzec-Cap-Sizun is a French commune in the Finistère department of the Brittany region, but it is also a nature reserve overlooking the bay of Douarnenez. The wild coastline of this region makes it especially interesting for landscape photographers. Another attraction of the region is that the weather conditions regularly change, making the landscape completely different depending on the seasons and tides. Even if you plan everything in advance, including waiting for the weather forecast to predict a superb sunset, by the time you leave the sky will probably be completely clouded over. But it's worth trying anyway!

"This photo was taken at the end of October, after a gloomy day that did not allow us to imagine there would be such a beautiful sunset. Knowing the region well, I went there anyway and I didn't regret it. The wind chased away the clouds and the sunset featured some superb colours. Even after sunset, as in this photo, you can play with contrast and lots of natural foregrounds, and accentuate the drama with a long exposure, such as the eight-minute one used here.

Instagram: @jerome colombophotography

Digital Camera says:

This fantastic seascape from France has contains all the elements of a perfect scenic shot. The detail of the coastline from the foreground to the background is superb, drawing your eye along to the beautiful capture of the sunset in the distance. Using the long exposure has created a wonderful ambience of the sea and sky against this fabulous coastline.

6 'Did someone say food?' by Nikki Rowley Todd

"I captured this otter at the Zoological Society of East Anglia at Banham Zoo in Norfolk. The otter was standing on his back legs – I'm not sure I'd seen that before, it was like he was impersonating a Meerkat! I was trying to capture the moment but I also love the lighting and the almost one-tone image. I like to get images of animals that are slightly different."

Instagram: @nikki_rowley_todd_photography

Digital Camera says:

This is a beautiful capture of an otter in a rather unusual pose. Well done on catching one as they tend to move pretty quickly. The expression in the facial details and whiskers give this image a lot of character.



7 'A Cold Winter's Jay' by Colin Abrams

"This image was shot in Rushmere Country Park, near Leighton Buzzard, UK. It was a grey day so it can often be tough to get the shot. However, the limited light made the colours pop on the Jay and the frosty cobweb also seems to naturally enhance it. What I tried to achieve with this shot was to inspire young new photographers and show that, even on cold, grey days, there are beautiful images wherever you look. The subject may not always be beautiful but how you see it can make it so."

Instagram: @Colinabramsphotography

Digital Camera says:

We loved this image, especially how Colin has made great use of the surroundings within the composition of the shot. The out-of-focus yellow leaves and bright colours of the jay contrast greatly against the pale background. A great capture, Colin.



8 'Girl in Black' by
Natalia Persoglio

"This shot was taken indoors at my home in Cheshire, UK, with controlled lighting to achieve the silhouette effect. I reeled in my daughter to help bring the idea to life, as I often do! She was very patient as the final shot took quite a long time to achieve. I like the dramatic contrast between light and shadow, and the delicate, almost golden outline of her hair strands adds a level of detail and softness to the image. I was trying to capture Mia's profile in a minimalistic

style, focusing on the form and outline rather than facial expressions or intense colour.

I wanted to leave as much as possible to the imagination of the viewer."

Instagram: @natpersogliophotos

Digital Camera says:

We loved the strong contrasting silhouette, with the backlight bringing out the details of the head and hair. It's a simple and minimal silhouette, but it's strong and made this image jump out from the other entries this month.

SEND US YOUR IMAGES!

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CAMERA CLINIC

NEW
SERIES!

Master the art of modern photography

This month: Drive modes

With all manner of drive functions to try out, your camera has untold potential

Check your camera menu for drive modes such as self-timer, multiple exposure and bracketing, including exposure, focus and white balance.



Will Cheung



Will
Cheung

An imaging journalist and freelance photographer based in London, Cheung has a wealth of experience over several decades.
www.williamcheung.co.uk

Traditionally, a camera's drive function only had one job – to set shooting speed. Usually, there were two options: single frame (S) or continuous shooting (C), with some pro models having two continuous options, low and high. With film cameras, continuous shooting could be two or three frames per second (fps). That sounds pedestrian but with only 36 shots available, it was sufficient. Of course, this all changed with digital and even modest DSLRs could rattle along at 6fps and sustain that speed for a few images.

Doing away with the reflex mirror mechanism has meant that mirrorless cameras are even faster and, with electronic shutters and stacked sensors, shooting rates have accelerated hugely. The Nikon Z 9, OM System OM-1 and Sony A9 III are capable of 120fps, the last two models giving full raw files at that speed. Whether you need that sort of high-speed talent is obviously another question.

But speed is not the only change. Drive modes now embrace far more than fast shooting. What features are on offer varies from model to model but options can include self-timer, interval timer (intervalometer), multiple exposures and bracketing, which often includes several options, including exposure, focus and white balance.

There's no industry standard when it comes to what facilities are included in a camera's drive mode, how they are accessed or how individual settings are fine-tuned. Generally, drive modes are accessed via a dial or through the menu, sometimes both, and these settings can be adjusted with command dials and buttons.

If you haven't delved too deeply into your camera's drive features, now is a good time to check out what tools you already have at your fingertips. You might be surprised at the creative potential just waiting to be unleashed.

Get the knowledge Get familiar with your camera's drive options

The first thing to make clear is that every camera will have different modes and options available. If you own an older mirrorless camera or a DSLR, some of the features we discuss here might not be available. Equally, such is the rate of progress in the world of digital imaging, we might not have covered some of the very latest options here.

A typical modern camera's drive settings take in more than how many pictures a camera can shoot in one second and its features are designed to help you achieve specific tasks. Thanks to innovations seen in mirrorless cameras, powerful tools such as high-res shot mode, focus bracketing and super-fast frame rates have now been made possible.

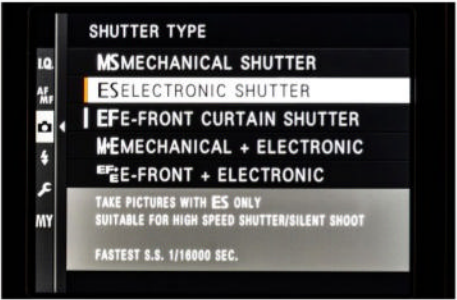
Three drive settings

Advice for tailoring your camera's settings to match the situation



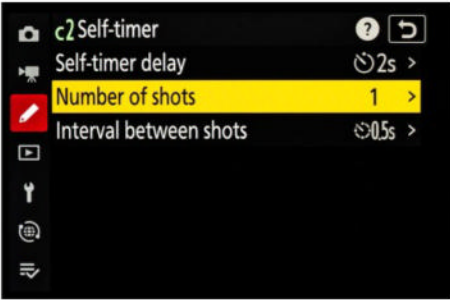
DRIVE MODES

This sets how many frames your camera takes when you press the shutter button – the default is S for a single shot. C stands for continuous shooting and there are often two options here – CL for continuous low and CH for continuous high. In C mode, depending on the chosen file format, the camera shoots for as long as the shutter button is held down, until the buffer or memory card are full or until the battery expires.



SHUTTER CHOICE

In mirrorless models, the fastest frame rates come with the electronic shutter. This shutter type is silent and vibration-free but can suffer from rolling shutter distortion where the wheels of a car come out looking elliptical or the sides of a building appear slanted. Images suffering from rolling shutter are very difficult to correct in editing, so use the mechanical shutter to avoid it in the first place.

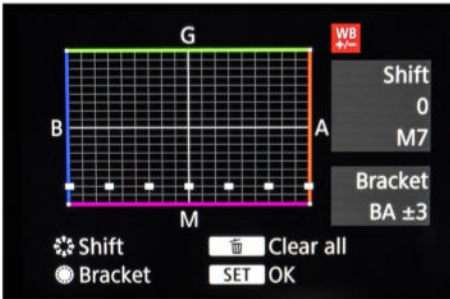


SELF-TIMER

This is a delay action tool to allow for hands-free shooting or when you want to include yourself in the picture. There's often a choice of delay time, usually either two or 10 seconds, and sometimes a handy option to shoot several frames. On many Nikon cameras, for example, up to nine shots is possible. On DSLR cameras, the self-timer often also flips up the reflex mirror and this keeps vibration levels down when the exposure is made.

Three types of bracketing explained

Cover all your colour, exposure and focusing options by bracketing



FINE-TUNING COLOUR

A camera in auto white balance (AWB) will do a great job most of the time. Shoot in raw format and you can fiddle with white balance all you like in editing but if you're shooting in jpeg format, it's best to get the colour correct in-camera. Mixed or artificial lighting can be troublesome so white-balance bracketing can help you out. Other white-balance tools can help, too, including manual Kelvin setting or custom WB.



EXPOSURE BRACKETING

Autoexposure bracketing (AEB) is a useful feature. If you are uncertain which exposure is best or you want to shoot different exposures to merge for the HDR technique, AEB is the mode to use. There is usually the option to set the number of frames in the bracket and by how much exposure is adjusted. Engage AEB together with continuous shooting to speed the process up and remember to cancel the feature once you've used it.

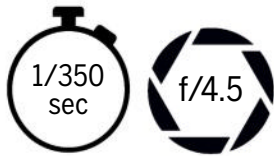


FOCUS BRACKETING

Focus bracketing can give maximum depth of field or control it within a specific range. The camera takes a series of shots at different focus points and these are merged in editing to give a photo with a deeper depth of field than a single shot. You can set how many shots and the focus differential between each frame. A few cameras, notably Olympus/OM System, have in-body focus stacking and the original files are retained for merging in processing.

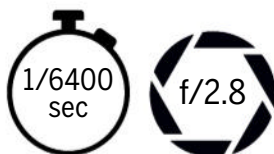
Perfect examples of when burst shooting can help

You might not need the camera's rapid shooting skills often but when you do, they can be really useful



STRIKE A POSE

The art of portrait and people photography is catching a fleeting gesture, look or pose and shooting quickly can help catch the instant when a scene comes together. The model was moving slowly and changing pose, using the breeze to catch the material of her dress, and as the sun was setting, the scene was constantly evolving. In this instance, a prolonged burst of frames wasn't necessary and I took short bursts of two or three frames as the scene changed. Also, as I was using a 50MP medium-format camera, shooting sparingly in this manner helped to keep the camera buffer clear. The image was taken on a Fujifilm GFX 50S with a 120mm telephoto lens.



IN THE FRAME

I was photographing a couple of guys practising their parkour skills. This chap leapt off an outbuilding with his arms outstretched and managed to get into position for a controlled landing about 5m below his launch point.

I was using a Canon EOS 5D Mark II DSLR fitted with a 24-70mm f/2.8 lens. The camera's fastest shooting speed was 7fps so I set that and got six frames from take-off to him dropping out of the frame. In this instance, I didn't pan because I wanted to keep the modern architecture background constant as he dropped down. To freeze the action, I went for a fast 1/6400 sec shutter speed.



IDEAL COMPOSITION

Having the camera in continuous shooting mode can help you capture the ideal composition with moving subjects. For this shot of the Canary Wharf skyline, I found a position where I could have a DLR train as the foreground interest. In readiness, I set the Fujifilm X-T2 to shoot at 8fps and waited for a train, which was coming from my left and moving away from me. I took a few photos as the train appeared in the shot, took another burst as the train filled the foreground and then a further few frames as the train moved away.

That gave me three different looks to choose from and the image I preferred came from the final set.



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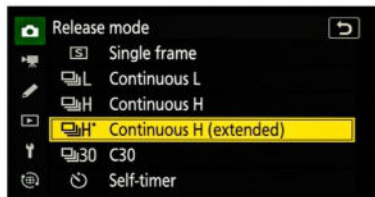
space@spaceanswers.com

Drive modes

They offer much more than shooting photos very quickly

Being able to shoot a sequence of photos very quickly is one of your camera's most potent superpowers and is frequently used by action and nature photographers. However, as discussed in this article, continuous shooting can be handy for scenic, street and portrait

shooters, too. Fast shooting setup in conjunction with autofocus and autoexposure means the camera will fine-tune settings as the subject moves from bright to shaded areas, for example. Shooting speed and the self-timer are commonly found in camera drive menus



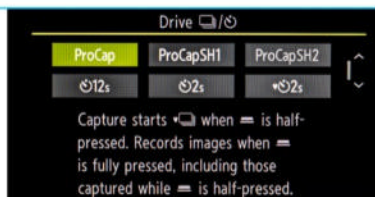
BURST SHOOTING

The frame rate and how many shots you get in a burst varies but even modestly-specified cameras can race along at four or five frames per second (fps) with exposure and focusing tracking. High-end mirrorless models can achieve 12fps with their mechanical shutter and 20fps and beyond with their electronic shutters.



AUTO-EXPOSURE BRACKETING

Auto-exposure bracketing takes one shot at the presumed 'correct' exposure and also some over- and underexposed shots – the number of shots and the exposure difference is up to you. This feature works with mechanical and electronic shutters and if the results are destined for merging in editing, keep the camera still.



PRE-CAPTURE MODE

This mode (also called pre-shot, pre-release or pro capture) lets you take pictures by holding the shutter release halfway down but these are only recorded to the card when the shutter button is fully pressed down. In practice, it lets you take shots of subjects that are difficult to time, such as a dragonfly or a bird taking off. Camera: OM System OM-1, 40-150mm f/2.8 with 1.4x teleconverter



FOCUS BRACKETING

Focus bracketing can be done manually but many mirrorless cameras have a dedicated automatic feature. The number of frames and distance difference between each shot can be set. Camera: OM System OM-1, 60mm f/2.8 macro lens. Aperture-priority AE.

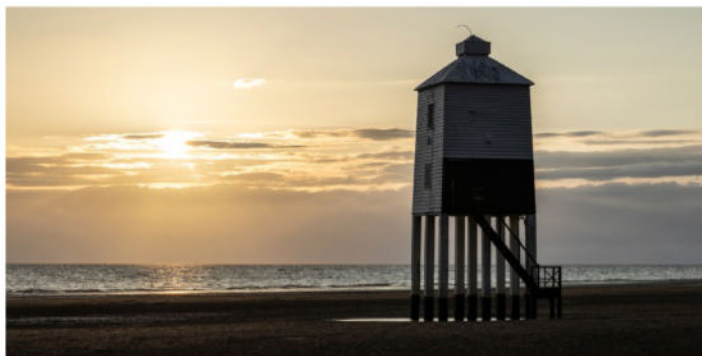


and control dials, and you might have to dig a little further into the menu to find other ways of releasing the shutter or to achieve certain effects.

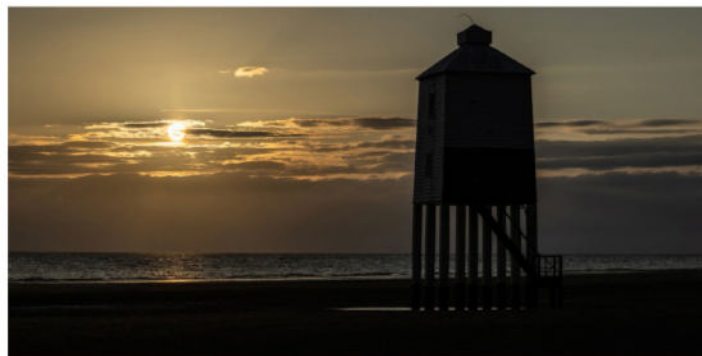
Here, we take a look at four drive options: continuous shooting, exposure bracketing, pre-capture and focus bracketing.



Will Cheng

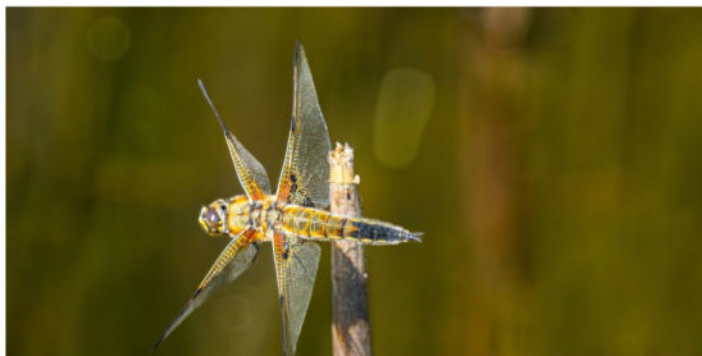


1/320 sec at f/11 and ISO 200, 0EV



1/1250 sec at f/11 and ISO 200, -2EV

Will Cheng



1/3200 sec at f/4 and ISO 800, -1EV



1/3200 sec at f/4 and ISO 800, -1EV

Will Cheng



1/1600 sec at f/4 at ISO 320, -0.3EV



1/1600 sec at f/4 at ISO 320, -0.3EV

Will Cheng

Pros and cons

Continuous shooting

Running off lots of shots is a huge benefit

Being able to shoot sustained bursts of pictures comes in useful for a broad range of subjects, including sporting action, wildlife and even when photographing children running about in the garden. It can mean catching the peak of the action, the decisive moment or the perfect wing position of a bird in flight. But while fast shooting has many benefits, there are times when it can be a problem, so it needs to be treated with respect.

Perfect composition
Shooting lots of frames rapidly can mean you get the shot you want. With a subject such as birds in flight, where the wing position changes quickly, it can mean the difference between getting the perfect composition or just missing out.

Remember memory cards
Set a fast continuous shooting speed and you can rack up a lot of photos in super-quick time. If you are shooting raw images, that also means you'll consume a great deal of memory, so make sure you have sufficient cards on your days out.

Sharpshooter
Handholding when the shutter speed is slow and shooting a burst in continuous mode can help get a sharp result. The first one or two shots might be blurred but because you've got the camera up to the eye, the third one could be spot on.

Finding the keepers
Rattling off lots of frames means you have to trawl through them to find the 'keepers'. Scrolling through images in-camera consumes battery and, on the computer, Lightroom can be slow with high-res files so try the free FastStone Image Viewer (Windows only) or Phoenix Slides (Mac and Windows). Photo Mechanic (Mac and Windows) is better, but it's \$169 or \$329 for the Plus version.

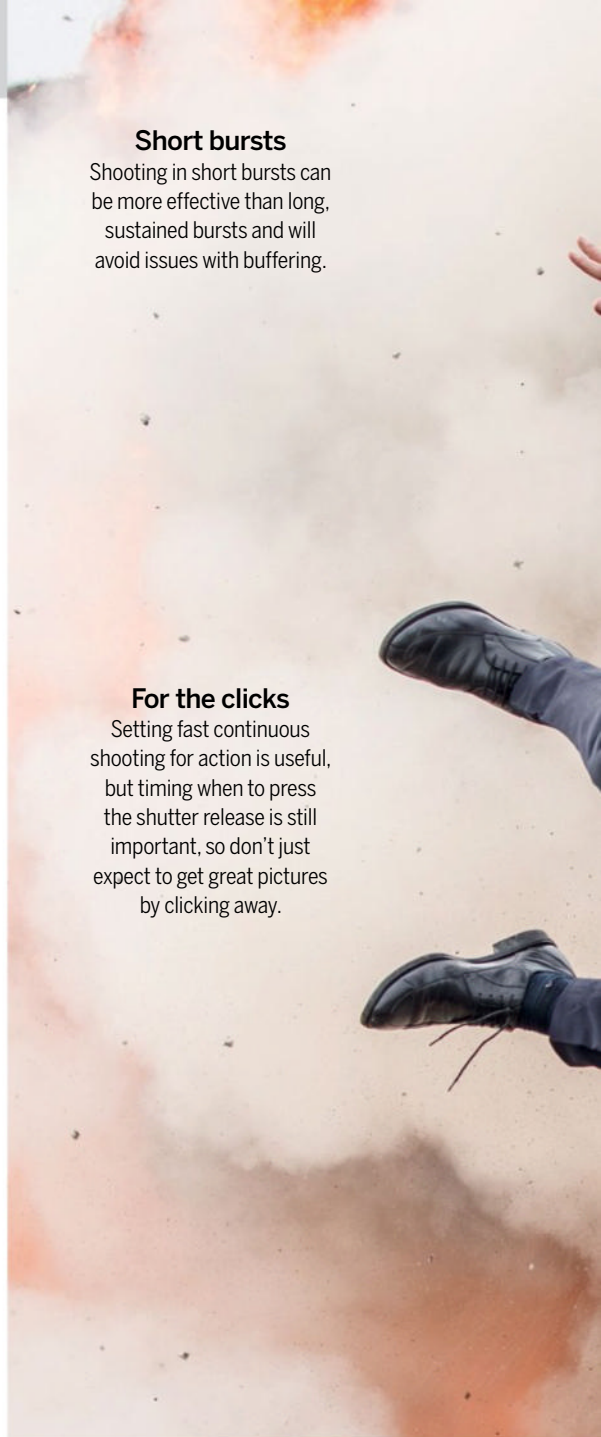
Rolling shutter
For the fastest shooting speed on a mirrorless, use the electronic shutter. In many cases, the sensor's relatively slow readout speed means images suffer from rolling shutter, where the subject displays strange warping or distortion.

Buffering
Shooting lots of frames could mean buffering and the camera slowing up or even stopping until pictures have been cleared from the internal memory. This can mean missing out on a great picture so learn to manage the buffer by timing your shots and shooting shorter bursts.

Viewfinder blackout
Tracking a fast-moving subject during continuous shooting can be difficult if the camera suffers from viewfinder blackout. This happens on DSLRs and mirrorless cameras although many new high-end models don't have the problem. If you have to pan with the subject, keep the subject in the shot.

Short bursts
Shooting in short bursts can be more effective than long, sustained bursts and will avoid issues with buffering.

For the clicks
Setting fast continuous shooting for action is useful, but timing when to press the shutter release is still important, so don't just expect to get great pictures by clicking away.



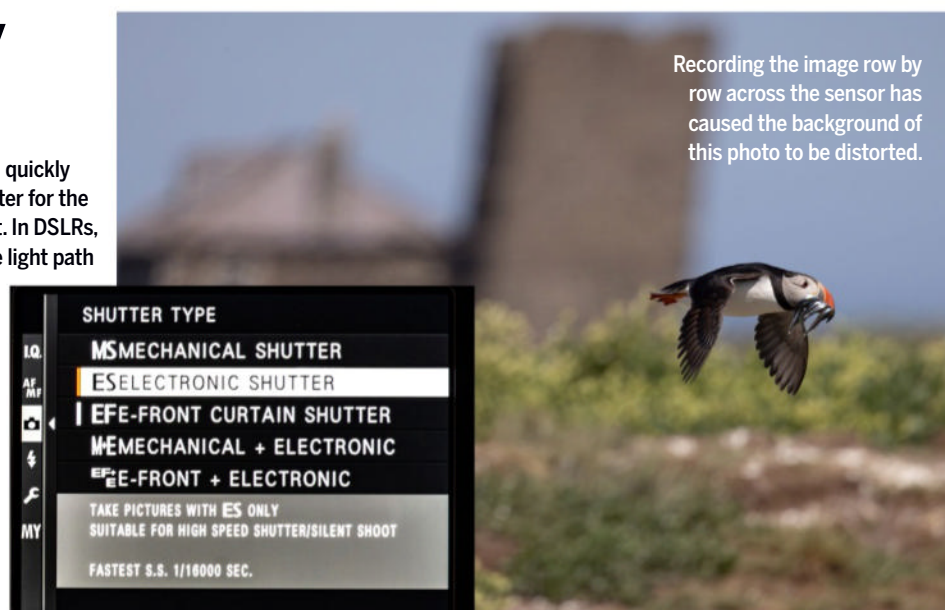
Camera know-how

Electronic shutters

Mechanical shutters have two blinds that travel quickly in front of the sensor: the first to open the shutter for the exposure to take place and the second to end the shot. In DSLRs, there's also a reflex mirror that has to swing out of the light path and return afterwards to create the viewing image.

Electronic shutters make an exposure by recording the image row by row across the sensor. This 'scanning' exposure happens quickly but not always quickly enough for fast-moving subjects and that is when rolling shutter distortion occurs. In this shot, the building has come out strangely.

Mirrorless cameras have both shutter types (with the odd exception) and when you want to shoot at a camera's fastest frame rate, the electronic option is needed. This type is also vibration-free and silent, but a 'click' can often be added.



Recording the image row by row across the sensor has caused the background of this photo to be distorted.



Continuous AF
When burst shooting action, remember to set servo or continuous AF so the camera will attempt to track with the subject.

Will Cheung

Camera tech Card speed

To get the ultimate speed, load up with fast cards

Invest in fast memory cards for the best shooting experience. Your options are limited by what card type your camera accepts and, as always in imaging, faster performance costs more.

SD type cards are the most widely used in cameras and UHS-II compatible models have a maximum theoretical performance of 312MB/s. There are SD cards on sale that have a read speed of 300MB/s, which is often expressed as 2000x (this rating is based on the original 150KB/s data transfer speeds of CD-ROMs). Write speeds are slower.

With super-fast continuous shooting, high megapixel counts and up to 8K video, faster cards were required. Many top-end cameras use CFexpress cards: Type A has a maximum performance of 1000MB/s and Type B (right) works up to 2000MB/s.

Maximum card speed

The video class rating tells you the card's minimum sustained speed, while this one is the maximum and isn't necessarily sustained. It's quoted in megabytes per second (MBps) and, with Lexar cards, also as an 'X' rating.



Shoot photos like a pro

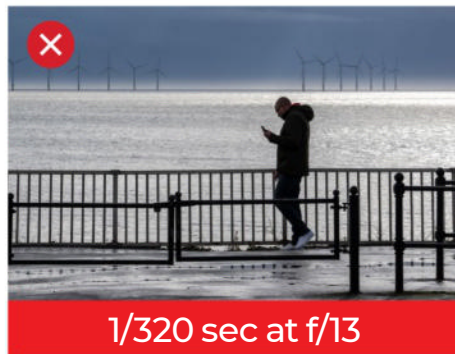
Using the drive menu to help improve your shots

■ We have seen that there's more to a camera's drive mode than simply allowing you to shoot a prodigious number of photographs quickly. Camera manufacturers pride themselves on pushing the boundaries so while shooting speeds might not get too much faster, what will improve is shooting capacity, even more accurate AF/AE tracking and better

electronic shutter performance. Indeed, we have already seen the first camera with a global electronic shutter in the Sony A9 III. Focus bracketing, high-res modes and pre-capture shooting are especially exciting, giving us fresh photo opportunities to explore. If you own a mirrorless camera with such features, now is a good time to try them out.

The right step

I like including figures in pictures but they have to look right to fit the composition. The combination of dark clouds and a glistening North Sea provided a marvellous backdrop and all I needed was human interest. I spotted a man coming along the promenade studying his phone. I framed up and pressed the shutter button when he entered the frame, got a handful of shots, including the one with his foot just about to hit the ground. Perfect.



Sweat the detail

In this Venetian scene, the sun-lit buildings were reflecting pleasingly in the canal and the gondola's prow decoration (the fero) looked great silhouetted against the colourful water. The gondola was bobbing in the water so the scene was constantly changing. Using a Fujifilm X-T2 and 55-200mm zoom, I set continuous shooting and took a few shots to choose from later. The shot I picked had a lighter patch of colour so the fero stood out well.



Aces high

In action photography, you're often in the hands of the photo gods so it pays to shoot plenty of shots to maximise the chance of success. In this instance, the best shot came at the start of the sequence when the two fighter planes were in tight formation but still with some separation between them. That wasn't the case with the following frame and the overlapping meant it was a failure.



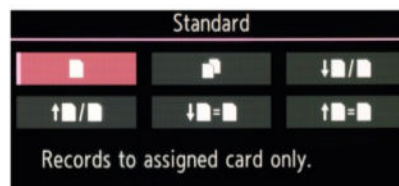
Camera skills Manage the buffer

Control your right forefinger to avoid filling the buffer

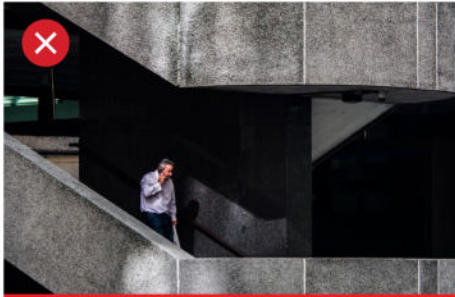
■ Take one or two pictures and they are written to a memory card almost instantly. Shoot a sustained burst and the greater amount of data means images are held in the camera's internal memory, or the buffer, as they wait to be written to a card. Once the buffer is full, more shots can only be taken as the space becomes available, so shooting shorter bursts gives the buffer more time to write images to the card and free up space for more.

The size of the buffer varies and you won't find it quoted in a camera's specification, so you only really get an idea of capacity with a practical test. However, generally, top-end models have bigger buffers, giving them greater continuous shooting capacity.

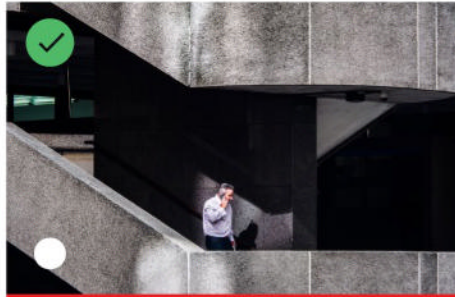
When you need the quickest shooting performance and have two cards in the camera, take one out or record to the fastest card only.



Wai Cheung



1/100 sec at f/6.3



1/100 sec at f/6.3

It's brutal out there

If you enjoy street photography, using burst mode will pay dividends. When you spot a potential picture, frame up and take a few shots. Here, the patch of light, framing provided by the brutalist architecture and human interest came together at the same time and lasted a few seconds. I took three shots, the first two are shown here, but decided that the second shot worked better. Taken on an Olympus OM-D E-M5 Mark II with a 14-150mm lens at 90mm.



1/125 sec at f/8

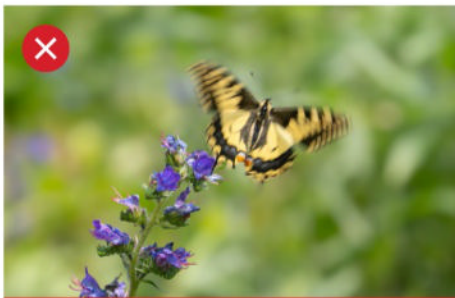


1/90 sec at f/8

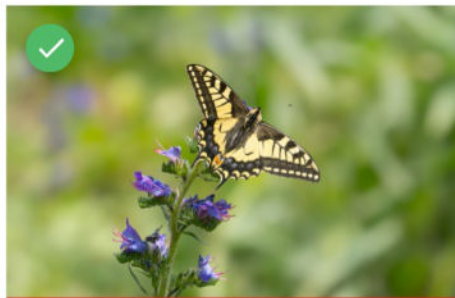
Moon rising

The camera's intervalometer and multiple exposure features were used for these shots. For my first attempt, I set the interval between shots at 3 mins and the camera to take a total of six shots. It wasn't far off, but the final moon was cropped and the interval was too long.

So I placed the moon much lower in the bottom-left corner, set eight shots and changed the interval to two minutes. I also changed the mode from average to additive.



1/400 sec f/6.3



1/400 sec f/6.3

Shooting on the fly

Swallowtail butterflies are often in a state of perpetual motion, which means that taking pictures of them can be tricky. They occasionally land for a few moments' rest and that can be long enough to focus and squeeze off a series of images. I was lucky with this one as I suddenly saw it and didn't have time to adjust my shutter speed. However, I got a sharp shot at 1/250 sec before it headed off. This was taken on an OM System OM-1 set to shoot at 20fps with a 40-150mm f/2.8 lens and 1.4x teleconverter.



1/1100 sec at f/5.6



1/680 sec at f/5.6

Second chance

Timing is often the difference between success and failure and having the camera set to continuous drive can help you catch the perfect moment. Although these two shots aren't hugely different, the better image of the two is the second shot – the market stallholder's face is receiving more light and his outstretched hand looks more active. The time difference between the two shots is literally fractions of a second, but shooting with a short burst of frames meant that I caught the best moment.

Pro tip Choose wisely

Save memory and choose the best format for the job

If you're a keen photographer and want the best image quality, you will shoot in raw format. However, raw formats are memory-hungry and you may not always need their editing flexibility. The jpeg format is a lossy format so you need to get the exposure and white balance accurate in-camera, but this type of file is much smaller than raw so if you want to shoot serious amounts of pictures in long bursts, this is a viable option. Indeed, it is often used by pro sports, news and wedding photographers.

If you prefer to have the security blanket of raw, your camera might have the option of shooting 12-bit, lossy or compact raw. The smaller file size means longer bursts are possible with minimal quality loss.



SEND US YOUR PHOTOS!

Now you know how to use drive modes like a pro, show us what you've learned and you could feature in our Reader Gallery:

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© Actes Sud, 2023 Photographs by Ruth Orkin © Ruth Orkin Photo Archive

Shot of the month

A new book about **Ruth Orkin** explores the work of a photographer inspired by the visual language of cinema



Ruth Orkin
Photographer

Title: 'Coca-Cola'
Location: New York City, USA
Date: 1950
Camera: 35mm

The work of American photographer, journalist and filmmaker Ruth Orkin appears in a new retrospective published by Thames & Hudson. Born to a silent-film actress, Orkin grew up in the shadow of Hollywood in the 1920s and 1930s and harboured ambitions of becoming a filmmaker. She realised this ambition later in life, collaborating with American photographer and director Morris Engel on *Little Fugitive*, a classic independent American film (1953). By this time she was settled in New York, where she had become recognised as a photojournalist, shooting for leading magazines. For Orkin, New York was a fascinating canvas to capture, with its relentless

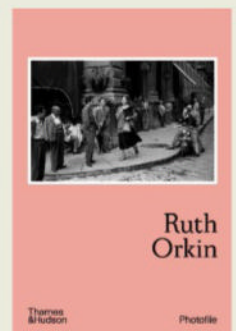
Orkin's use of colour in this photograph could have been an experiment or a detour, says Anne Morin, as it wasn't "at the centre of her work".

energy and endless photographic opportunities. Captured in 1950, Orkin's photo of people standing at a food counter shows her interest in the minutiae of New York life, what photography curator Anne Morin describes as "a sort of fluid lyricism" in her introduction to *Ruth Orkin (Photofile)*.

Morin notes that time was 'plural' in many of Orkin's photos, as she included more than one figure doing more or less the same thing – a 'doubling' of the subject. But in 'Coca-Cola', the viewer can explore up to 10 sub-narratives.

"Indeed, in this image, we find the idea of the declension of a photogram, of its multiplication, as if in the end it were a single character moving through the scene," says Morin. "This idea of continuity is interesting in Orkin's work, as it establishes a language at the crossroads between photography and cinema, and induces this dimension of time into the still image." ●

Ruth Orkin (Photofile)
by Anne Morin is
published by Thames
& Hudson (ISBN
978-0-500411-24-7)
priced £15/\$18
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This month...

Tool School: The power of Path Blur

Set off without your ND filters or unable to use long exposure? Use the Path Blur tool to mimic the effect, then transform your landscape scenes with a strong black-and-white treatment

Fundamentals: Change clothes with Masking

Take advantage of this hidden Lightroom feature to change the colours of clothes after your shoot



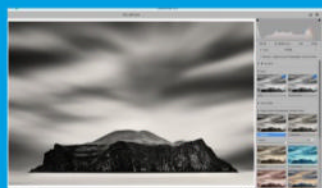
Get the Look: Take greater control of contrast

There are many ways to alter the contrast in your images, so take greater control and use contrast as a creative tool



VIDEO TRAINING

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The power of the Path Blur tool



LIGHTROOM
Change clothes after your photoshoot



PHOTOSHOP
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Frequency separation actions

Before



After



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The power of Path Blur in Photoshop

Use this handy filter to mimic long-exposure scenes and transform them with a bold black and white treatment



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James Paterson

With over a decade as a writer and photographer, James Paterson knows exactly which Photoshop and Lightroom tools and techniques matter most.

Blurred motion can be a game-changer for landscape photos, even if you add it in Photoshop afterwards. The original image here is a case in point. The straight-out-of-camera colour version is rather drab and the choppy seas are a distraction. By contrast, the blurred black-and-white version is much stronger. The motion blur draws attention to the jagged shapes and contrasts with the textures on the island. But a long exposure isn't just a clever effect or a visual trick, it's also a way to convey the passing of time or emphasise a sense of isolation, which is why it works for our shot here.

Of course, it's always best to capture the motion blur we're mimicking here at the time of shooting by using a long exposure (to capture motion in clouds you're likely to need a strong neutral density filter to stretch your shutter speed out to a minute or more). Sometimes, a long exposure isn't achievable. At times, you might be caught short without an ND filter or a tripod and there are times when it's impossible – here, for instance, the shot was taken from a moving boat. Thankfully, it's fairly simple to add motion blur effects in Photoshop, especially if you can get to grips with the excellent Path Blur tool.

Use our 10 free analogue-style profiles



A long-exposure effect such as this goes hand in hand with a moody monochrome treatment. We've supplied 10 profiles that mimic analogue treatments, including Sepia, Selenium and Platinum, for you to experiment with. These are based on the Photographic Toning set of Gradient Maps in Photoshop. Open Lightroom or Photoshop's Camera Raw, go to the Preset panel and click the menu and 'Import Presets and Profiles' to load them. Go to the Profile Browser in the Basic Panel and experiment with the treatments, using the Amount slider to control the strength of the effect. Here, we used Cobalt-Iron.

1 Make a selection

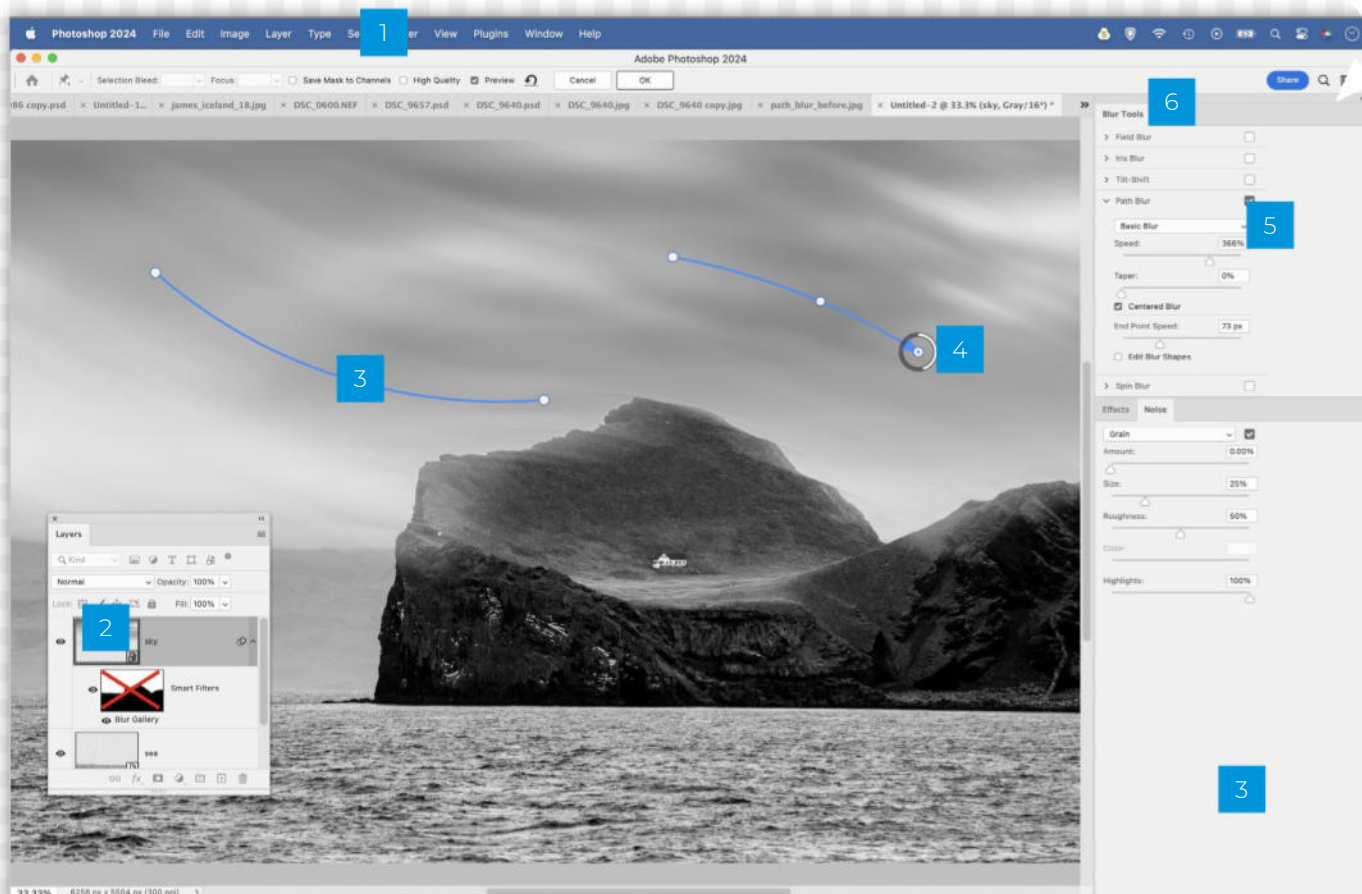
First, we need to isolate the area. Go to Select > Sky then hit Cmd/Ctrl+J to copy the sky to a new layer. Highlight the bottom layer and use the Object Selection tool to select the sea, then copy to a new layer with Cmd/Ctrl+J. Right-click the new layers and 'Convert to Smart Object'. This keeps any filter effects non-destructive, so after applying our filters we have the option to tweak things later.

2 Isolate the layer

Before we start blurring parts of the image, hold Cmd/Ctrl and click on the layer thumbnail of the part we want to blur. This loads the shape of the layer as a selection. Now when we apply our Path Blur filter, we'll also create a mask that confines the blur to the shape of the selection, so it doesn't creep into other parts of the image. Once that's done, go to Filter > Blur Gallery > Path Blur.

3 Make a Path

Drag a line in the image to create a path for the blur then add points along the line to create curves to the blur shape. Drag more lines to add to the effect, but too many will make the blur look unnatural. A couple of horizontal lines leading in from the edges with a slight curve were all that we required to blur the clouds here. Check Edit Blur Shapes to alter the direction of blur at either end of the line.

**4 Set a speed**

The Speed slider controls the strength of the blur effect – fast-moving clouds will blur more. As well as the overall speed, you can also click on either end of the line and set the speed to create different strengths along the path or hover over points for a circular on-image control. This lets us create weaker motion blur in the distance, so the motion will be less apparent, while in close areas, the motion will be more exaggerated.

5 Customise the blur

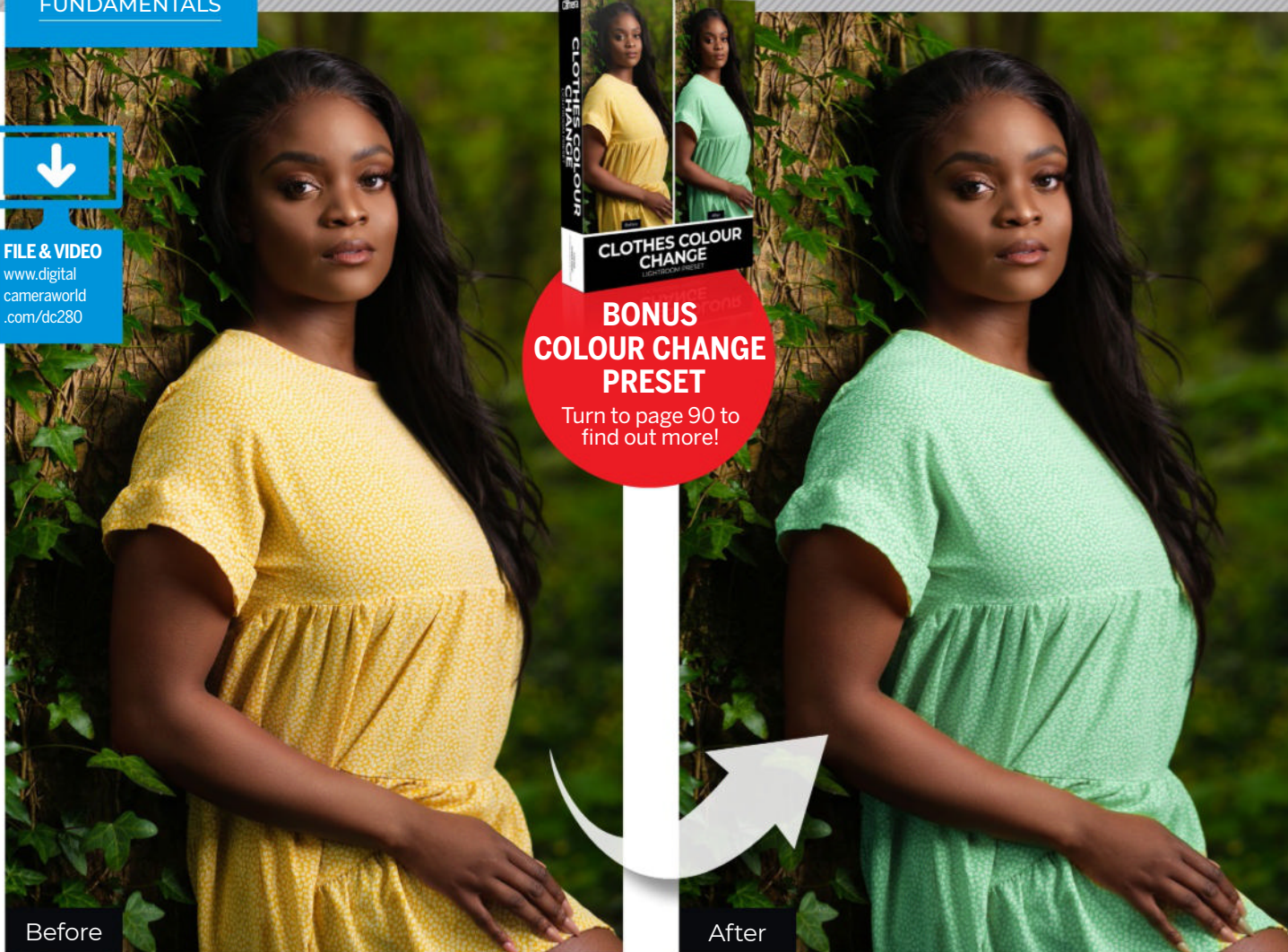
Set the blur type to Basic or Rear Sync Flash. In Basic, the blur expands outwards in either direction along the line. In Rear Sync Flash mode, the blur extends in one direction leaving a sharper side to objects, like shooting a long exposure with rear sync flash. The Taper slider affects the strength in an unpredictable way, so experiment with it. Centred Blur shifts the entire effect, so leave it checked.

6 Use Field Blur

The Blur Gallery offers several types of blur. Field Blur lets us create transitional blur, which is useful here. We can use it with our Path Blur to make the effect stronger in the foreground sea so that the waves are less defined. Turn Field Blur on, drag the circular point to the shoreline and reduce the blur to 0. Make a point at the bottom of the frame and increase the blur strength to create a transitional fall-off between the two points.



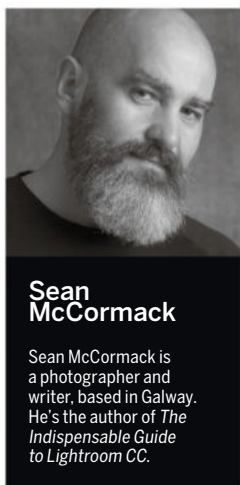
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Changing clothes after the photoshoot

Had a creative change of mind when editing? Let's explore Lightroom tools that can help

Expert tip:
The great thing about clothing being in the People masking section is that you can alter the clothing on anyone in the photo. Each set of clothes can be selected separately.



Sean McCormack

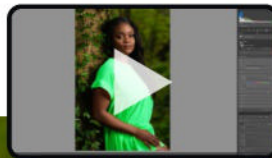
Sean McCormack is a photographer and writer, based in Galway. He's the author of *The Indispensable Guide to Lightroom CC*.

Spring has sprung and it's a great time for combining nature and portraits. You booked the model or your client booked you. Off you go into nature and shoot some portraits you love. Styling was discussed in advance and you had

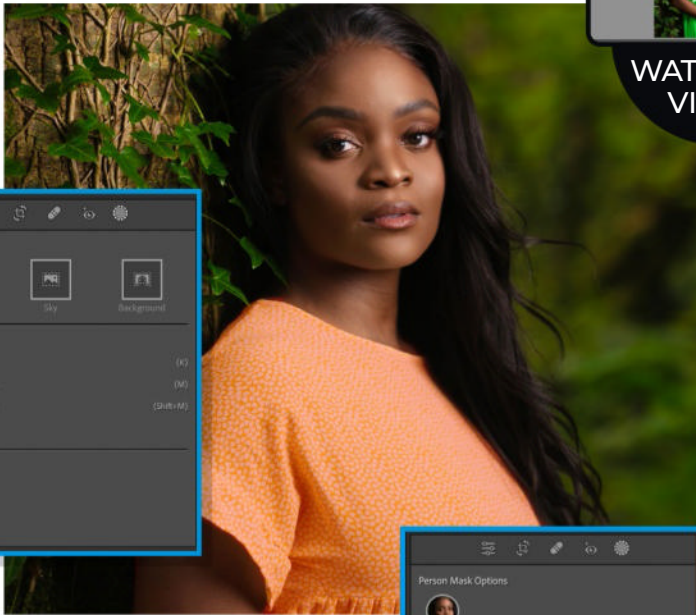
the perfect colours for the scene – or maybe you didn't. Either way, you're back at the computer and decide that different coloured clothing would work better creatively. Disaster!

Well, maybe not. Lightroom Classic's masking has become so sophisticated that you can even select clothes now. If you look at the Masking panel, that statement may confuse you as you clearly can't see an option for a clothing mask. It's still there, just a little hidden. You see, it's actually part of the People Mask, visible at the bottom of the panel. By clicking on the mask for a person, you get a huge range of masking options, including facial skin, body skin and clothes. Choosing this will select that person's clothes. Clearly, it won't differentiate jumpers and jeans, but this technique works well on dresses or matched clothing. From there, it's just a matter of refining the mask and the colour...

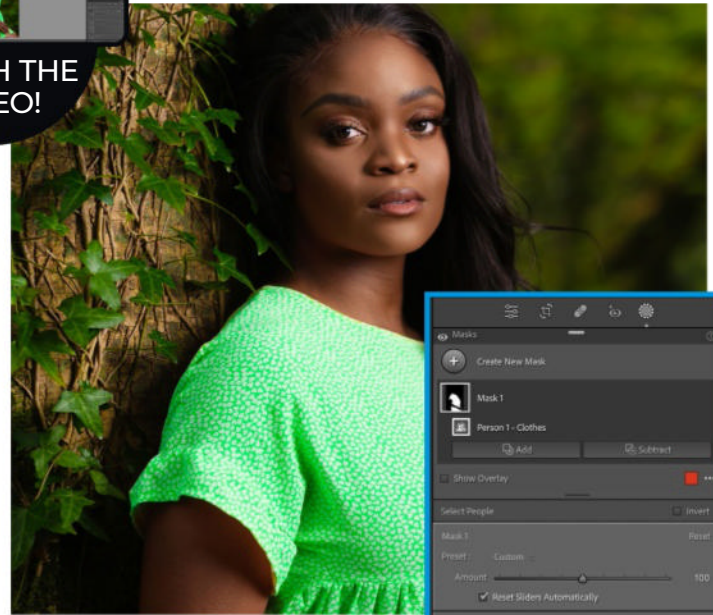
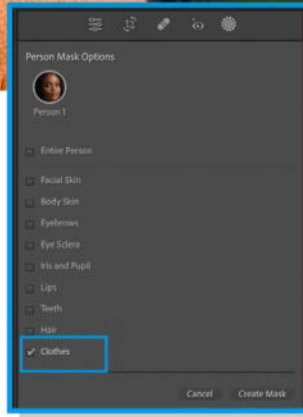




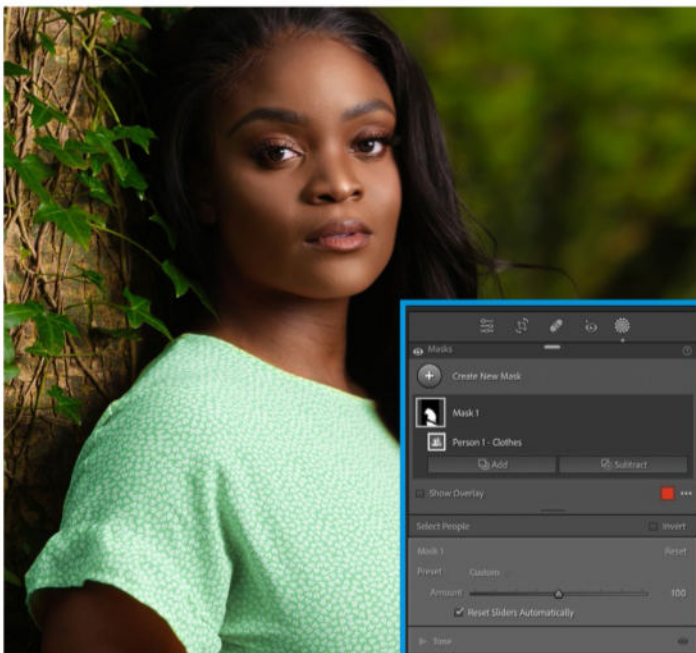
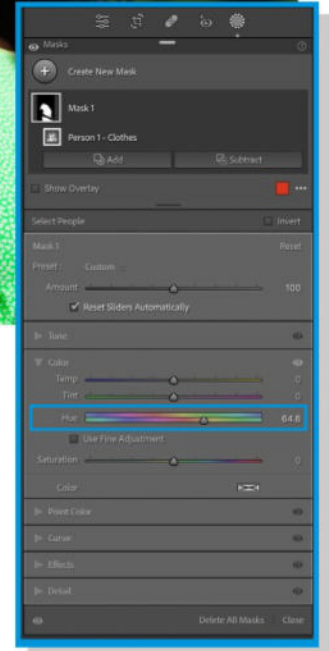
WATCH THE VIDEO!



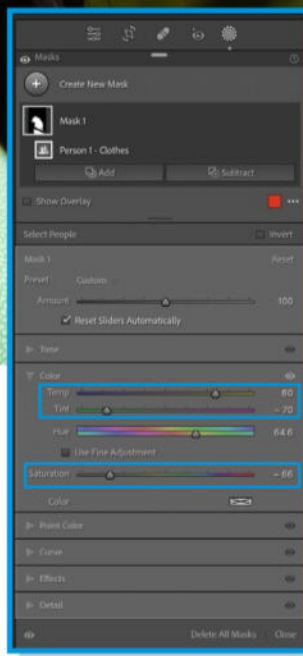
1 Masking tools
Go to Masking in the tool strip and click it. Allow 'Detecting People' to run and select the person you want to edit. From the list, choose 'Clothes'. The mask will preview in the window showing the selection, then click Create Mask.



2 Change colour
Open the 'Color' section in the Masking panel. We're going to make the dress look green by moving the Hue slider about. To get a green colour, move the arrow towards the green section of the top bar. Here, a value of around 65 looks good.



3 Edit the colours
To refine the colour further, set Temperature to 60 and Tint to -70. This warms the tone and increases the green. It looks too saturated now, so set Saturation to -66, giving a more pastel version.



4 Refine the mask
Some of the edges of the mask may need some work. Click Add, then Brush and paint in any missing areas with Auto Mask on for ease. Finally, click Subtract and then the Brush, again with Auto Mask on, and remove any areas where the mask spills over the edges.





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GET YOUR
CONTRAST ACTIONS

Turn to page 90 to
find out more!



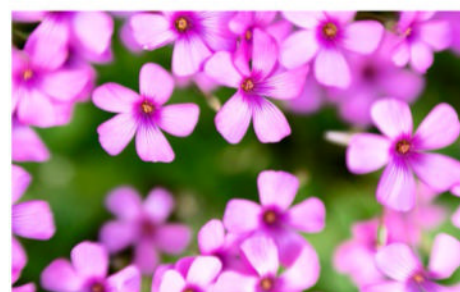
Before

Take control of contrast in Photoshop

There's more to contrast than black and white points – increasing or decreasing contrast can be a powerful creative tool

Contrast, or even a lack of it, can be a much more important element in the overall look and feel of a photo, whether you're working in colour or black and white. At its most basic level, an increase in contrast is simply increasing the black and white points – the level where pure black and pure white are displayed. Of course, in many situations, you wouldn't want to push these points that far because you'd lose detail, but it's the easiest explanation of what's happening.

Controlling contrast is often seen as a basic part of image processing and it is to some degree because it's often applied and then forgotten about. But there are multiple ways of adding and subtracting contrast alongside other effects for a more creative approach. What's more, you can also use different Blending modes to change the way Layers behave visually, which adds a degree of additional creativity and, ultimately, control.



1

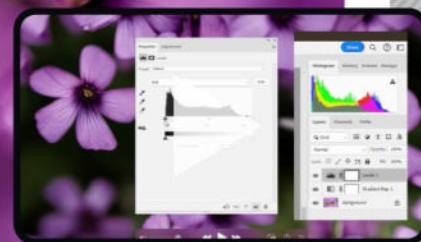
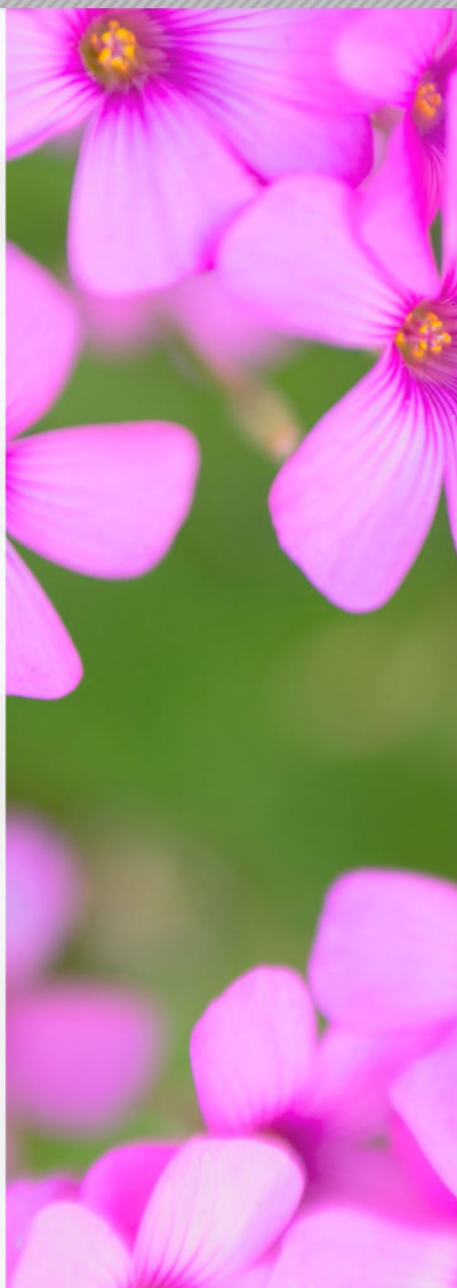
Natural colour

Click on the Create new fill or adjustment layer icon at the bottom of the Layers panel and select Curves. When the dialog opens, left-click around three-quarters of the way up the curve and drag the point up and to the left, then place a point a quarter of the way up the curve and drag it down and to the right to create an S-Curve. Close the dialog and change the Blending mode from Normal to Multiply so only contrast is increased and not saturation. Now you can adjust Opacity to control the strength.

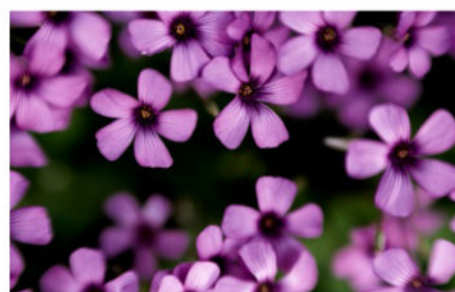


James Abbott

An advanced Photoshop user who has created hundreds of tutorials, James Abbott is also the author of *The Digital Darkroom: The Definitive Guide to Photo Editing*.



WATCH THE VIDEO!



2

Add haze

Create a Levels Adjustment Layer and when the dialog opens, drag the black Output slider to 35 and the white Output slider to 235. This will add haze and reduce contrast. Next, lighten the image slightly by dragging the Midtone slider to 1.15, then close the dialog. The reduction in contrast and the increased haze will wash out the colours, which is fine if you like the effect. However, if you'd prefer more natural colours, change the Blending mode of the Layer from Normal to Luminosity.

3

Warm contrast

Create a Photo Filter Adjustment Layer and, when the dialog opens, click on the Filter drop-down menu that's set to Warming Filter (85) by default and select Sepia from the list of options. Set the Density to 100 per cent and close the dialog. Next, change the Blending mode from Normal to Soft Light to add contrast and, if you need to reduce the strength, simply set the Layer to a lower Opacity. If you would like a stronger contrast, set the Blending mode to Overlay.

4

Deep contrast

Press D on the keyboard to set the default palette colours of black and white. Make sure black is in the foreground and, if not, press X to switch from white. Next, create a Gradient Map Adjustment Layer and immediately close the dialog because it will create a high-contrast mono conversion. Set the Blending mode to Multiply, then create a Levels Adjustment Layer. Set the Black point below the histogram to 10, the White point to 245 and the Midtone point to 1.20 to lighten the image slightly.



THIS MONTH'S BONUS SOFTWARE EXTRAS

15 actions, presets and profiles to boost your shots

As seen in this month's tutorials, you can give your photos a new look in just a few clicks with these actions, presets and profiles

This month, we have curated another collection of software extras to help transform your images. Once installed in Adobe Photoshop, Lightroom or Camera Raw, these actions, presets and profiles can have a huge impact on your photos in a matter of seconds, saving you lots of time at the editing stage. Rather than having

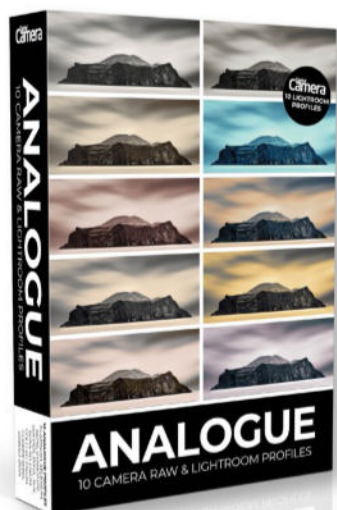
to manually adjust a photo to give it a certain look, these actions, presets and profiles will get you there in a few clicks.

This month, we're giving away two different sets of presets for Lightroom and Photoshop, plus 10 analogue profiles for Camera Raw and Lightroom. Why not give them a try and see how they can elevate your images to the next level?

How to use your software extras

Once you have downloaded the 'dcm280-files.zip' file to your computer, extract it and put the Actions and Presets folders where you can easily access them. These folders contain the files, PDFs and installation instructions.

Instruction PDFs can be found in the Gifts folder of the issue's download file



10 ANALOGUE STYLE PROFILES

Software: Camera Raw & Lightroom

We've supplied 10 profiles that mimic analogue treatments, including Sepia, Selenium and Platinum, for you to experiment with and transform your images. These profiles are based on the Photographic Toning set of Gradient Maps in Photoshop. Open Lightroom or Camera Raw, go to the Preset panel, click the menu and 'Import Presets and Profiles' to load them.



CLOTHES COLOUR CHANGE PRESET

Software: Lightroom

This preset can change the colour of clothes, using the Mask tool on any image imported into Lightroom. This well-hidden feature is located in the Masking panel in a menu that appears when the People mask is activated. Read our tutorial on page 86 and you will be able to change the colour of your model's clothing using a slider – perfect for any portraits where you have a change of creative direction after the shoot.

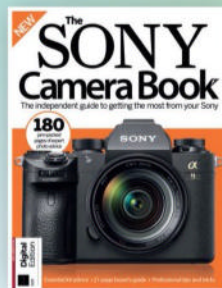
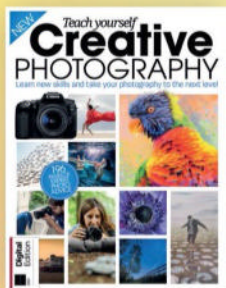
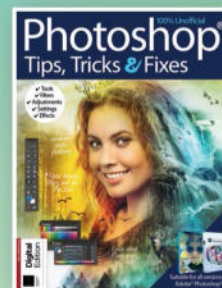
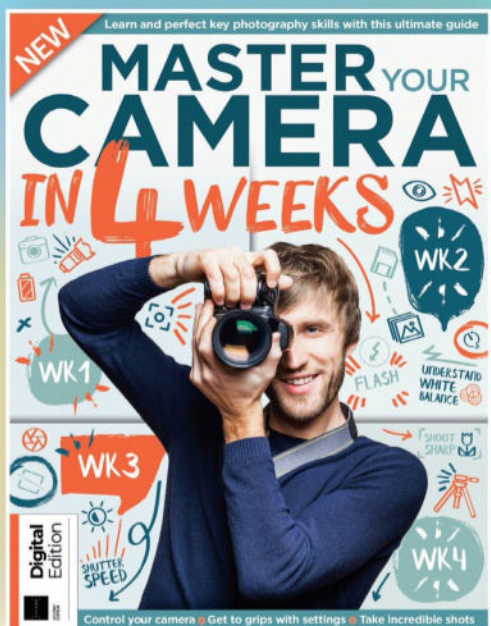
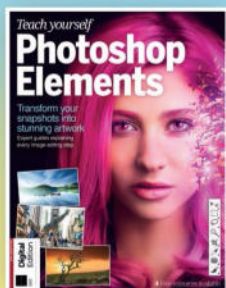


FOUR CONTRAST ACTIONS

Software: Photoshop

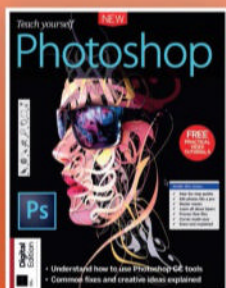
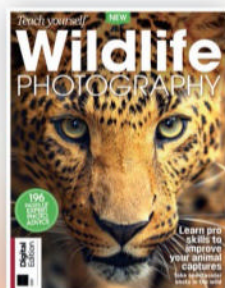
These four contrast actions can alter your images by adding different types of contrast. Choose from the four actions in Photoshop to see which works best with your images. In conjunction with our tutorial on page 88, we'll show you how to create your own blends of contrast styles to extend your library of actions in Photoshop. The four actions included are Natural Colour, Add Haze, Warm Contrast and Deep Contrast.

Download all three packs from: www.digitalcameraworld.com/dc280



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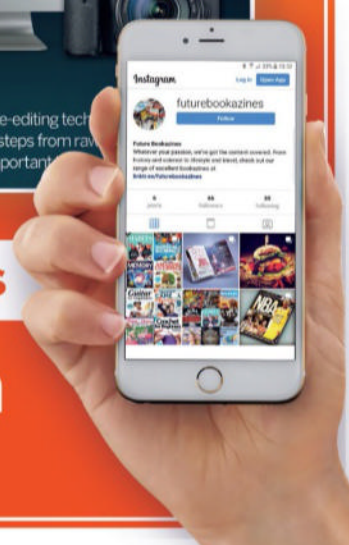


Photo Answers



Andrew James

Andrew is a highly experienced writer and photographer – if you have a problem, he is here to help.

Bamboozled by bracketing? Maddened by macro lens mysteries? Send your technique and camera questions to digitalcamera@futurenet.com



Andrew James

Making a good impression

Q I've seen images that almost look like impressionist paintings. Can you tell me how this is done?

Jeff Reece

A There are two options here, Jeff. Either the image has been created by using intentional camera movement (ICM) or a conventional image has been brought into Photoshop and then given a treatment using

a filter. To do this in Photoshop, you'd go to Filter > Filter Gallery and choose one of the main Artistic options available, such as Paint Daubs, Dry Brush, Watercolour and Rough pastels. You can play around with the strength of each filter to see if there is anything you like that works with the photo you have chosen.

I'm not a great fan of these filters but I acknowledge they can be fun. The ICM route is more satisfying and takes a bit of skill to get right. You need a slow shutter speed, something like 1/8 sec and a lot of trial and error. You need to deliberately jiggle the camera about as you shoot your images, which makes composition slightly harder, so I always think it's worth shooting a wider than

There are two ways you can create an image that looks like an impressionist painting. One involves Photoshop filters but a more satisfying option is to use the technique of intentional camera movement (ICM).

you need and cropping afterwards. The danger with this technique is the image can sometimes look a little 'muddy' if the scene isn't colourful. You might need to add some extra clarity afterwards in post-processing because even an impressionist-style photo needs good contrast, just as a real painting does. However, get it right and you have a unique image of a scene, as no two ICM images ever look exactly the same.

Tech Check Bracketing

Vary exposures then choose which is best



What is bracketing?

Bracketing is a camera technique where you shoot a series of images (typically three) of the same subject but at varying exposures.

Why would you do it?

Having a series of three or more shots at varying exposures gives you a better chance of getting one exposure exactly as you want it. You will also bracket a scene if you intend

to merge the images together into a High Dynamic Range (HDR) image. This works best with scenes where there is extreme contrast.

How do I do it?

You can manually change the shutter speed from one shot to the next or you can set up the Auto Exposure Bracketing (AEB) function on your camera so one press of the shutter button will allow you to take the

whole series of images. It's often best to have the camera on a tripod for this, but you can handhold and take bracket exposures, too.

What exposure range would you recommend?

This depends on the lighting conditions at the time of shooting, but often exposures of -1, 0 and +1 will be enough, but in high contrast scenes, you could try -1, 0 and +2

You can merge frames captured with different exposure values.

Should I bracket all the time?

There's no need to, especially with the excellent metering systems on modern cameras and your ability to judge exposure through the histogram. However, in tricky lighting conditions, or just because you want to create HDR images, then this bracketing technique is useful.



Which macro should I get?

Q I recently bought a Canon mirrorless and am looking at buying an RF mount macro lens, either the 100mm or 85mm. There's a big price difference, so which would you get?

Sue Percival

A If money was no object, I'd opt for the 100mm because it is an L series – L stands for Luxury, so the build quality and weather-sealing are better. I am using the EF-version of this lens on my DSLR (or mirrorless cameras via an adaptor) and it's a superb optic.

I also like the focusing distance with this lens. On my version, it's 0.30m and on the RF version, it's 0.26cm. Remember, this is the distance between the subject and the sensor, so the distance between the front of the lens and the subject is a lot closer. The 85mm has a similar working distance at 0.35m so that's all good, except the 85mm is not a true 1:1 macro; it's only half lifesize, which is 0.5 magnification.



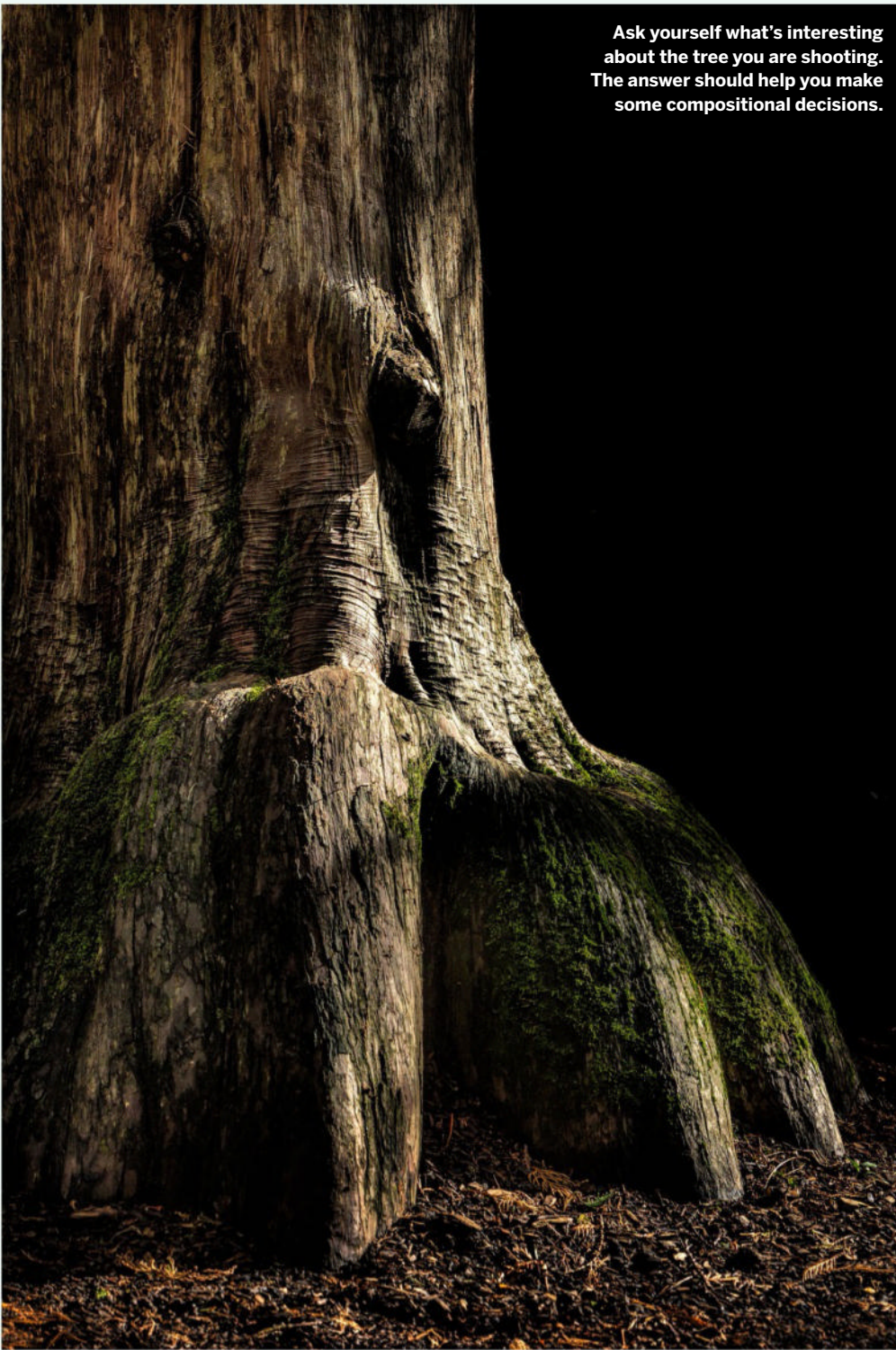
Does this matter? It depends on what you want from the lens. If I'm choosing a macro lens, I want one that's a specialist at close-ups and gives me 1:1 magnification. But of course, a lens like the 85mm, which is a great length for portraiture and gives a 0.5 magnification, will suit your needs better. After all, you can always crop your image to make the subject bigger in the frame.

Ultimately, you will need to make your final decision based on budget and what you want from the lens, but you have two good options here. Firstly, the out-and-out 'true' macro lens with excellent focusing and higher build quality but a big price tag. Alternatively, the 85mm, which is cheaper and allows half-magnification.



There's a choice between a 'true' macro and a lens that best suits your needs.

Ask yourself what's interesting about the tree you are shooting. The answer should help you make some compositional decisions.



Andrew James

Apertures for landscapes

Q I've just booked a landscape holiday to Scandinavia but I'm inexperienced and don't even know about aperture. Someone told me to always shoot at f/11 and not worry about it, is that right?

Larry Cresswell

A To an extent, the principle in your question stands up. Shooting at f/11 means you are going to have a reasonable depth of field in your image, although in part, this depends on the lens used. With landscapes, you will typically be shooting with a wide-angle lens and you want everything from the immediate foreground to what's in the distance to be pin-sharp.

If you focus at a point roughly one-third into your composition, you will maximise this sharpness and f/11 will certainly give you excellent detail. That may well be enough for your image to work, but so might f/8 or f/16. One good way to work out whether you have enough or too little depth of field is to shoot in Aperture Priority mode, and with Live View displayed on your LCD screen simply scroll through each aperture and look carefully at the difference between each frame. Avoid using the smallest aperture, though – in theory, this gives you maximum sharpness, but can also reduce image quality.

Shooting at f/11 or f/16 means that less light reaches the sensor, so it's inevitable shutter speeds will be low. I'd suggest you invest in a sturdy tripod for your trip.

Andrew James

Tree top tips

Q Can you give me some tips for getting good shots of trees?

Laura Hooper

A I could write a whole magazine on this subject because it's so varied, but trees are certainly among the best subjects you can find to photograph. Whether it's a lone tree in a landscape or a close-up detail of bark, you have to look at your subject and how the light is giving it form and interest.

The first thing I always look for when shooting the whole tree, or even part of

it, is its shape and how it relates to the background. Ask yourself the question, 'What is it about the tree that interests me?' The answer to this will help you to make some compositional decisions around what's important to keep in the frame and what isn't.

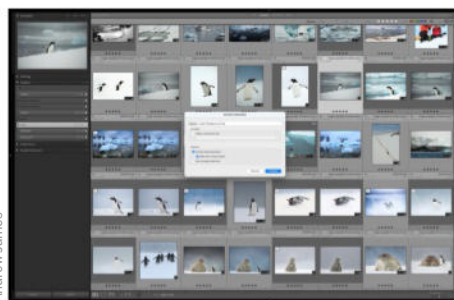
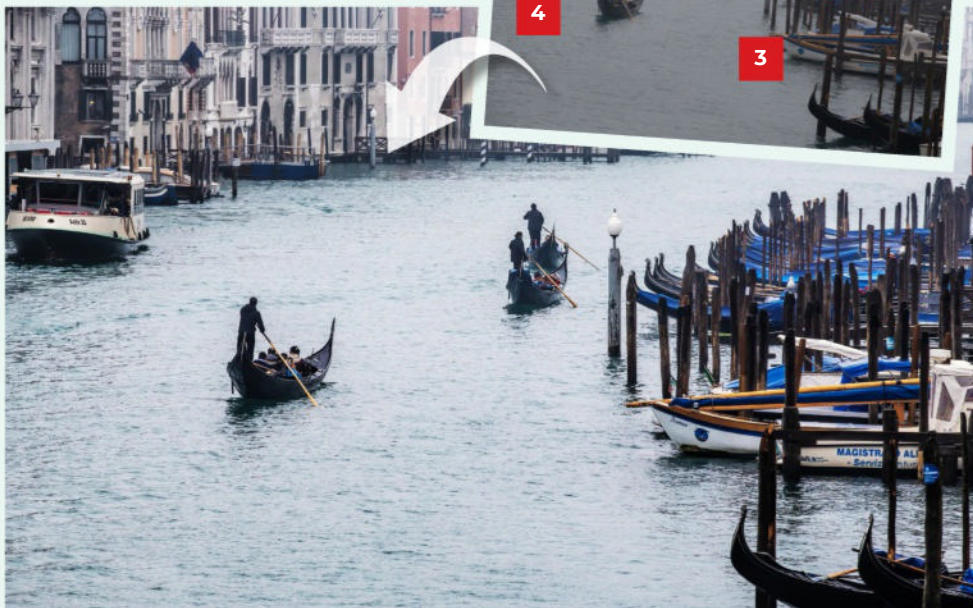
For example, have a look at my shot (above). I wasn't interested in the whole tree, just the base and part of the trunk because the way the light was falling on it made it look a bit (to my eyes anyway) like a dinosaur's foot and leg! The side lighting was strong but directional so, by spot metering off the highlight area, I was able to throw the background to dark shadow. This further accentuated the trunk shape of the tree and its textures.

Image Rescue

Let's fix this flat and lifeless image in Lightroom and Photoshop

This image of a famous Venice view was snapped on a murky day, so the starting raw file is flat and lifeless. Let's begin with a slight tweak to the composition. It's only a question of a minor rotation to straighten things up, so we can use the Crop Tool for that **1**. In the Basics Tab, we also need to make a few changes to improve the look of the scene **2**. We can brighten it by pushing the Whites slider to +50 **3**. Next, we'll push the Clarity Slider to +30, just to give the shot a slightly crisper feel, before pushing the Vibrance slider up to 28 to bring in a little bit of colour **4**.

Now, we'll take it from Lightroom to Photoshop, copy the image into a separate layer, Ctl+J, and then change the blending mode to Soft Light. The Opacity slider can control the intensity of the effect. In this case, 70 per cent was about right.



Classic collections

Q Is there a way that I can keep different selections of images grouped together in Lightroom Classic?

Rory Stafford

A In the Library module, the third left-hand panel is called Collections. By clicking on the + (plus) symbol you reveal a dropdown menu where you select Create Collection and open a dialogue box. Tick the 'Include selected photos' option and name the collection whatever you want.

If you prefer to edit these images in the collection separately from the source file, also click Create Virtual Copy. The image or images you have highlighted when you create the collection will be automatically placed in it, and then you can search multiple folders, dragging any other images you want into the collection. Remember, the photo doesn't actually move from one place to the other, it sits in both the source folder and collection. Every grouping you make will be visible in the Collections panel.

Backups when travelling

Q What's the best way of ensuring that my images are backed up while I'm travelling?

Joy Lancing

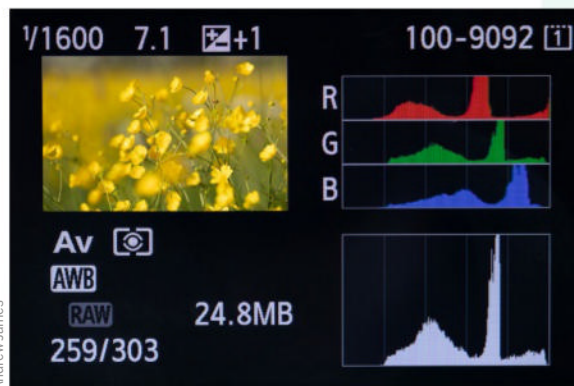
A I carry two separate portable hard drives and back up my images to both of these each evening using my laptop.

These are then kept in two different places while I travel. One is usually zipped securely in a bag and the other remains on me – zipped in a waistcoat pocket.

I don't stop there either. Once a memory card is full, I don't reuse it, so I always try to have enough cards to last the whole trip. This way, I should return home with three different backups of every image I've shot. It might be overkill, but so far this system hasn't let me down.



Carrying two portable drives and backing up images every evening may be overkill, but Andrew says this system works well for him.



The RGB histogram displays information about the red, green and blue channels within a photo and whether one colour is over- or under-exposing.

RGB or brightness histogram?

Q I understand the point of a standard histogram but how do I use the RGB histogram?

Terry Hindle

A You simply use it to gauge greater exposure details about an image, as it reveals information about each channel making up the colour within your photo – red, green and blue. The brightness histogram is the most useful but the RGB display can show you whether one particular colour is over or underexposing, so you can adjust the settings accordingly.

I use it occasionally if I'm photographing a colourful subject like a red or yellow flower, but I am more likely to rely on the Brightness Histogram in most shooting situations.

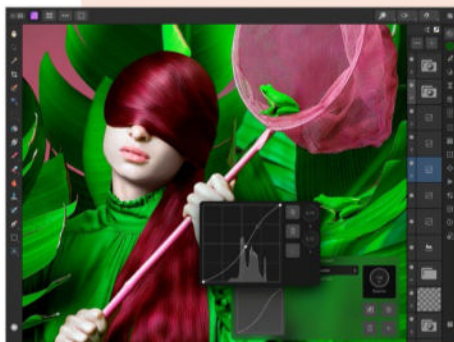
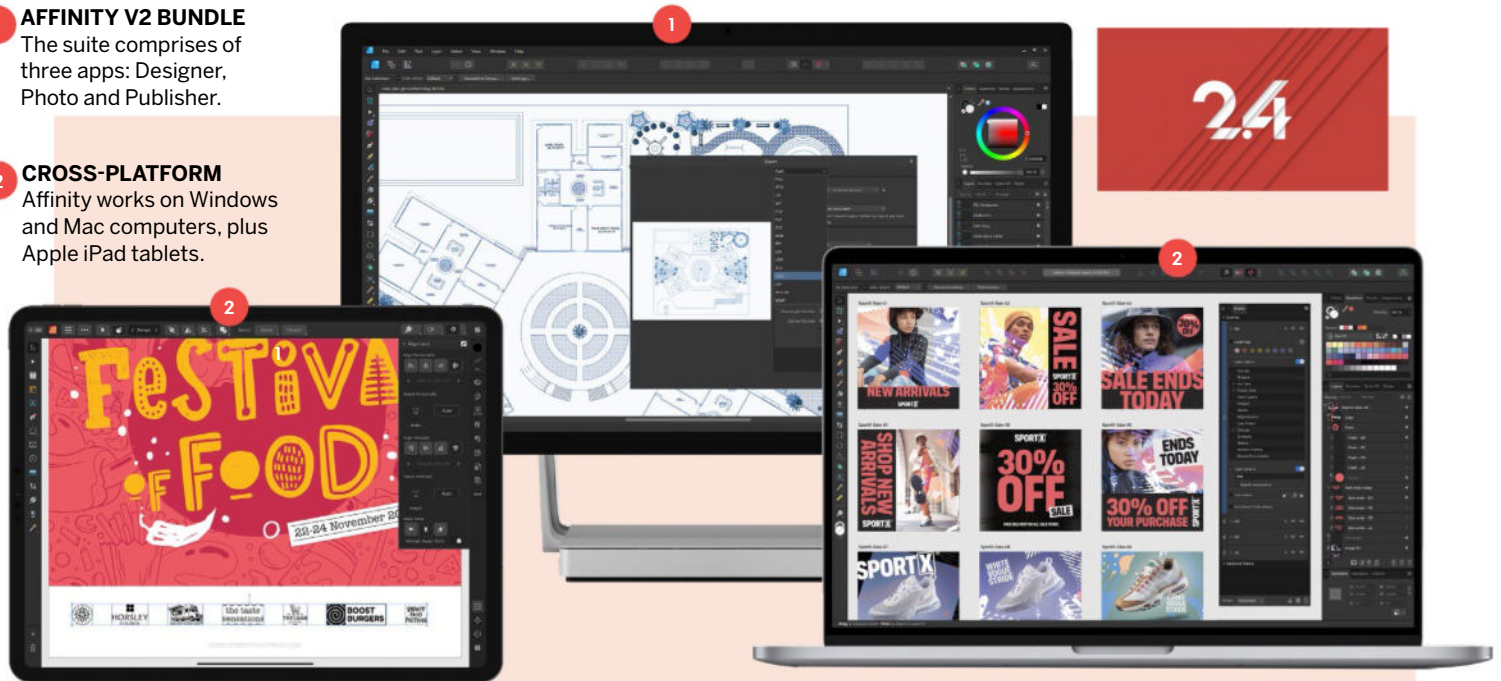
In Focus

The latest photography news from around the globe

1 AFFINITY V2 BUNDLE
The suite comprises of three apps: Designer, Photo and Publisher.

2 CROSS-PLATFORM
Affinity works on Windows and Mac computers, plus Apple iPad tablets.

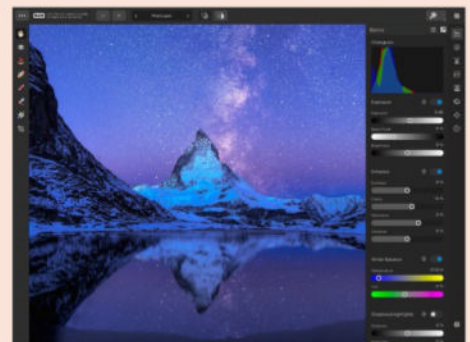
2.4



3 DRAW IN TONE CURVES
For precise photo editing, a graphics tablet and a stylus takes some beating.



4 MAKE COMPOUND MASKS
Combine multiple mask layers non-destructively with fine control.



5 HARNESS THE POWER OF RAW
Enjoy the tactile control of a stylus when processing raw files on a tablet.

Affinity Photo 2.4



Subscription-free editing software and Photoshop alternative gets even more versatile with this update

Serif has added support for 50 new cameras to its photo editing software package, Affinity Photo. The latest version, 2.4, now supports camera models including the Nikon Z 8, Z f and Z 30, along with the Sony A7R V, A9 III and A7C II. Newer Panasonic cameras such as the Lumix G9 II and GH6 are also now compatible with Affinity Photo. As cameras such as the Nikon Z 30 and Sony A7R V are now over a year old, Serif took time in adding some of these newer models to its supported camera list, but the expanded camera support is welcome.

Yet Affinity Photo version 2.4 doesn't just add extra supported cameras. Serif claims it is now the first photo editor to offer 32-bit HDR support, thanks to the addition of 32-bit HDR PNG 3rd Edition. This is in addition to the current True HDR support for both Mac and Windows and means Affinity Photos meets all key requirements for high dynamic range on-screen graphics. The software is also able to export HDR images to display in Google Chrome, with other web browsers expected to follow. **affinity.serif.com; free (upgrade). £68/\$70 (standalone)**



1 SIGMA 500MM F5.6 DG DN OS SPORTS

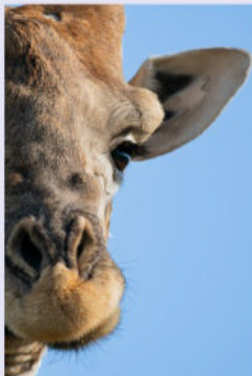
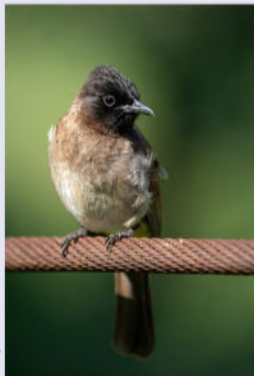
2 SIGMA 15MM F1.4 DG DN ART

Two new Sigma L- & E-mount lenses

500mm F5.6 DG DN OS Sports and 15mm F1.4 DG DN Diagonal Fisheye Art

Only for mirrorless cameras, the **Sigma 500mm F5.6 DG DN OS Sports** comes in L-Mount and Sony E-Mount versions and is designed to be small, light and affordable. A high-speed HLA linear motor for 'fast, accurate and near-silent' autofocus is one of the leading features, as is five stops of optical compensation.

Sigma claims that its **15mm F1.4 DG DN Diagonal Fisheye Art** is the world's first f/1.4 diagonal fisheye. Although it can be used for landscapes, portraits, architecture and more – this optic will be perfectly suited to astrophotography. sigmauk.com; **£2,779/\$2,999 (500mm F5.6)**. sigmauk.com; **£1,869/\$1,999 (15mm F1.4)**



SIGMA 500MM F5.6 DG DN OS SPORTS

This new lens is a mirrorless alternative to Sigma's older 500mm F4 DG OS HSM Sports for DSLRs



SIGMA 15MM F1.4 DG DN ART

With diagonal fisheye lenses, the image fills the frame; a circular fisheye gives a circular image with black borders



Tenba launches Skyline v2 series of bags

With a sleek and modern design, water-repellent fabrics and tough and reliable YKK zips, this new collection of pouches, top loaders and shoulder bags offers affordable maximum protection. uk.tenba.com; from **£14 (Skyline v2 Pouch 3)**



Magda Stoltie



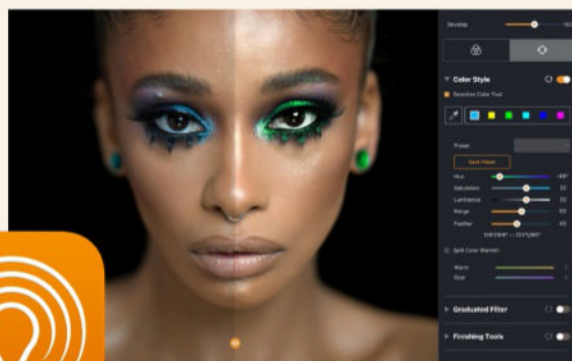
Lensbaby releases Sweet 22 lens

The 'Sweet' range is designed to create a pin-sharp area of focus vignettted by a smooth blur effect. The Sweet 22 offers the brand's smallest sweet spot yet, and it fits a variety of mirrorless mounts. lensbaby.com; **£179/\$180**

Radiant Photo updated to version 1.3

New portrait and colour tools added

The latest update to this standalone or plug-in image editing application introduces powerful new subject-aware tools for portraits, which focus on natural skin tones and Color Style tools. The portrait tools feature 10-level skin tone detection, plus depth and colour cast corrections. radiantimaginglabs.com; **free. £129/\$129 (standalone or plugin)**

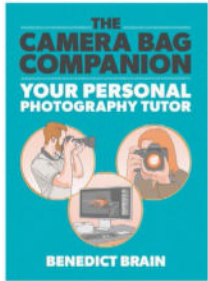


Focal point

Rounding up what's new and exciting



Lumix S 28-200mm F/4-7.1 Macro O.I.S.
Introducing the world's smallest and lightest 7x zoom lens for full-frame cameras... this compact superzoom's optical path features 17 elements in 13 groups and Dual I.S. 2 image stabilisation.
www.panasonic.com;
£899/\$898



Camera Bag Companion by Benedict Brain

Our regular columnist has been busy penning a new book! It aims to put him in your camera bag – literally – where he will be on hand with his clear and friendly expert photography advice.
www.illexinstant.com;
£22/\$27

Vanguard Alta Pro 3VRL 303 for stills and video

Aiming to make it easy to get horizons bang on for multiple camera setups, this new aluminium or carbon fibre tripod has three-section 30mm legs for stability and a load capacity of up to 25kg.
www.vanguardworld.co.uk; from £300/\$460



DxO PureRAW 4

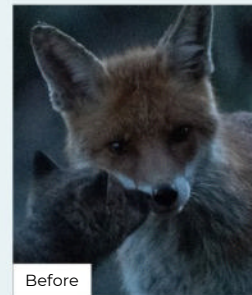
Better edge sharpening and a new preview option lead the upgrades



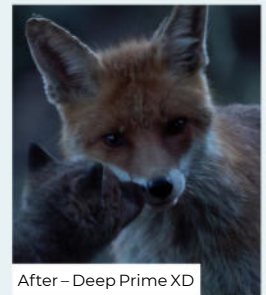
The improved edge softness correction in PureRAW 4 derives from DxO's own detailed lens testing procedures.



The latest version of this raw processor, which can be used standalone or as a Lightroom Classic plugin, brings a new and improved version of DxO's DeepPRIME XD raw denoising process ('XD' stands for 'eXtra Detail'). DxO says DeepPRIME XD2 offers crisper and cleaner fine detail for 'unprecedented' clarity and detail, and includes improved edge softness correction and advanced noise reduction. Other improvements to PureRAW4 focus on noise reduction and upgrades to the workflow.
www.dxo.com; from £69/\$79 (upgrade)



Before



After – Deep Prime XD

©Neil Villard

Increased control over noise reduction in PureRAW 4 comes via optional 'Luminance' and 'Force Details' sliders.

Leica launches SL3

Full-frame mirrorless with a 60MP sensor, phase detect AF and 8K 30p video

While the Leica SL2 was a beautiful camera, it had much in common with the Panasonic Lumix S1R – not least the sluggish contrast-based autofocus system. The new SL3 remedies this by being technologically unique and introducing hybrid phase detect autofocus, giving it substance to match its style. In specifications terms, the SL3 is a monster: its triple-resolution sensor offers 60.3MP, 36.4MP or 18.5MP shooting, to match the workflow and output needs of its user, and Dual Basis ISO covers ISO50-100,000. That sensor resolution is also good for 8K and C8K video (uncropped) up to 30p, and video shooters will be happy with a full-size HDMI port.
leica-camera.com;
£5,920/\$6,995 (body only)

Fully weather-sealed and with IP54 certification, the Leica SL3 can work in extreme conditions and temperatures from -10C to 40C.





1 BILLINGHAM 225 MKII
Shown here in the Khaki Canvas/
Tan Leather finish, the 225 MKII can
hold an 11-inch tablet in addition to
a camera, lenses and accessories.



2 BILLINGHAM 335 MKII
Unique to this bag is this Navy Canvas/
Chocolate Leather finish. The 335 MKII
can hold a 14-inch laptop in addition
to a camera, lenses and accessories.



3 BILLINGHAM 445 MKII
Pictured in the Sage FibreNyte/
Chocolate Leather finish, the 445 MKII
can hold a 16-inch laptop in addition
to a camera, lenses and accessories.



4 BILLINGHAM 555 MKII
This version of the 555 MKII, here in the
Black FibreNyte/Black Leather finish,
can hold a 16-inch laptop in addition
to a camera, lenses and accessories.



Billingham updates its 5-Series bags

225, 335, 445 and 555 get MKII designations and detail and design improvements

The iconic British camera bag maker celebrated its half-century last year, and its 5-Series bags have become bona fide classics. The MKII iterations, which are all large enough to carry the latest full-frame and medium-format cameras, feature luggage trolley straps on the back for convenience while travelling, and 'V-Bridge 15' padded dividers to support lenses that are attached to cameras. For increased comfort when carrying them for extended periods, the 225

MKII and 335 MKII now feature the same wider shoulder slings and shoulder pads as the 445 MKII and 555 MKII variants. All bags are handcrafted from premium three-layer waterproof fabric with a core 'StormBlock' butyl rubber layer. The top-grain, vegetable-tanned leather and solid brass fixings come as standard across all 5-Series MKII bags.
www.billingham.co.uk; £425/\$478 (225 MKII); £451/\$507 (335 MKII); £474/\$533 (445 MKII); £542/\$610 (555MKII)



OpenAI

Examples of OpenAI's latest SORA text-to-video model include a spaceman wearing a knitted helmet (left) and Tokyo street scene at night.



Jon Devo
[instagram.com/gadgetsjon](https://www.instagram.com/gadgetsjon)

Jon is a professional photographer, videographer and technology journalist.

Scanning ahead...

A year on from the first Generative AI videos, **Jon Devo** looks at how far the tech has come

If you witnessed the first attempts at Generative AI video a year ago, including 'Will Smith Eating Spaghetti', I share your horror. If you haven't, trust me, don't google it. As with all things AI, the technology has experienced a generational leap in fidelity in the year since those early demonstrations.

People who are part of the Hugging Face AI community will have had a heads up about what was coming, but many members of the general public lost their minds when OpenAI took to X (formerly Twitter) in February to share SORA, its text-to-video Generative AI Model (www.bit.ly/dcm280sora). The set of videos, created by text prompts, showed a selection of scenes, actions and art styles, between nine seconds and a minute long. Of course, these demonstrations were cherry-picked, but they were simply astonishing.

Using the prompt: 'A movie trailer featuring the adventures of

a 30-year-old spaceman wearing a red wool knitted motorcycle helmet, blue sky, salt desert, cinematic style, shot on 35mm film, vivid colors', SORA was able to generate a video with multiple scenes, as well as realistic cinematic lighting and camera movements, including human-like characters moving within each scene. In another video, SORA created a night scene in Tokyo, with a lady in a red dress, leather jacket and sunglasses walking down the street as the camera tracks backwards capturing her movements. The wet floor reflects the neon street signs and shadows of passers-by. The main character's movement is a little off, but it's an impressive demonstration of something generated from text without any editing or corrections. It's difficult to communicate exactly how compelling each of these videos are, so check them out on the OpenAI account on X (Twitter) if you have the time.

Since the worldwide reveal of SORA, other leaders and innovators in the space of generative AI have begun

sharing demonstrations of Generative video that go further than OpenAI's impressive model. The EMO: Emote Portrait Alive audio-to-video diffusion model, created by the Institute for Intelligent Computing, Alibaba Group is one of the most mind-blowing models I've seen (www.bit.ly/dcm280emo). EMO can take a still image and animate it based on an audio source. This would be impressive enough if the model simply moved the subject's mouth to portray a realistic lip sync, but EMO goes further. Through a two-stage process that trains the model to faithfully map motion to the face of the subject, EMO understands the context of the subject's facial expression, maintaining the emotion and contextual tone while animating the face to deliver the source audio.

We're rapidly moving into a world where any image of a person, whether still or in motion, will be easily remixed to produce new, compelling content. The optimist in me wonders what opportunities we may have to revisit old content and animate them with audio-to-video and text-to-video AI models. There will, of course, be concerns around authenticity and deception, as content produced using these models and their offspring will soon become indistinguishable from reality.

Are you inspired or terrified? I'm a little bit of both. ●

"We're rapidly moving into a world where any image of a person, whether still or in motion, will be easily remixed to produce new, compelling content"

KitZone

New gear, buying tips and the world's toughest tests



102 Fujifilm X100VI _ Update to a much-in-demand modern classic



106 Polaroid I-2 _ Premium instant camera with a premium price



108 Canon RF 24-105mm f/2.8L IS USM Z _ A standard zoom reborn



110 Sony FE 24-50mm F2.8 G _ Fresh thinking for a 'trinity' fast zoom



F

ujifilm's X100VI is probably the nearest thing we have to a viral camera at the moment, thanks to its predecessor's halo effect.

Exposure on social media and a scarcity of supply has made the Fujifilm X100V, which launched in 2020, highly desirable for many users of TikTok, with reports of potential buyers having to wait months to land one. Fujifilm will no doubt be hoping that a newer version of the same camera, which retains the form factor and upgrades what's inside, will cause similar demand. So

turn the page to see what our reviews editor made of the new compact at its launch event in Japan. Another storied brand being reviewed this month is Polaroid, with a new instant camera featuring high-tech LiDAR at its heart, albeit available for a high price.

A pair of interesting optics also passes through our lab. Canon recently launched an RF 24-105mm standard zoom, but with a wider maximum aperture than the EF mount version, while Sony has reduced the long-end reach of a standard 24-70mm to save on size and weight. But how will all this fresh thinking fare? *Niall Hampton*



Plus: Buyer's Guide DSLR & mirrorless models, plus best-buy products
See page 112

The awards bestowed by the Digital Camera lab...



Given to the top product in a group test



For products that receive five stars overall



Given to products that offer superb value for money

Ratings explained

- ★★★★★ Best in class
- ★★★★☆ Excellent
- ★★★☆☆ Good
- ★★☆☆☆ So-so
- ★☆☆☆☆ Poor

All products reviewed in KitZone are tested independently by photographers with years of experience, using lab and real-world testing

Compact Fujifilm X100VI



1
The body (in a silver or black finish) and the 23mm lens are identical to the X100V.

2
The lens has a control ring, which by default controls the camera's digital zoom.

3
One minor quibble is with the grip, as there isn't really a huge amount to cling onto.

Fujifilm X100VI

£1,599/\$1,599

Looks like its predecessor but packs in some stealth upgrades

www.fujifilm.com

Specifications

Sensor: 40.2MP X-Trans CMOS 5 HR Sensor
Processor: X-Processor 5
Lens: Fixed Fujinon 23mm F/2.0 II (35mm equivalent)
Viewfinder: 3.69m-dot OLED EVF / OVFL Hybrid
Screen: 3.0-in 1.62M-dot 2-way tilt touch LCD
Max burst: 11fps (manual shutter), 20fps (electronic shutter)
Image stabilisation: In-body only, 6.0 stops
Video: 6.2K 30p, 4K 60p, HD240p, 4:2:2 10-bit, F-Log, F-Log2
Memory: 1 x SD/SDHC/SDXC, UHS-I
Size (L x H x D): 128 x 75 x 55mm
Weight: 521g (including battery and memory card)

The overnight success of the X100V took everyone by surprise, but none more so than Fujifilm. Launched in 2020 as

the fifth iteration of Fujifilm's premium compact camera, its sudden popularity among TikTok influencers caused a six-month waiting list to purchase one.

Fujifilm is back with the Fujifilm X100VI, a compact camera with a fixed lens design. The premium vintage aesthetic is made for street and travel photographers who want a pocket-friendly camera. The X100 range is also one of the few true rangefinder designs still being made, with the pricier manual focus only Leica M11 the only other option with an optical viewfinder.

Key features

Externally, little has changed from the previous model, but when you have a viral success on your hands, you don't want to rock the boat. The body and 23mm lens are identical to the X100V, with all the major improvements hidden

inside the camera. The X100VI sees a bump in resolution from the X-Trans 5 sensor from 24MP to 40MP, with video now topping out at 6K. The new X-Processor 5 also powers better autofocus with subject recognition and tracking for faces, eyes, animals, birds and vehicles. For those who own the Fujifilm X100V, the question is whether the Fujifilm X100VI is worth the upgrade.

Build and handling

The design is near-identical to the X100V but that repetition is no bad thing. The X100 series harks back to rangefinder film cameras from the film era and the X100VI is built to a premium standard that feels amazing in the hand.

Fujifilm remains committed to dials on its cameras and there are two on top, one handling exposure compensation and the other shutter speed. This shutter speed dial also has a clever trick where you can lift and twist it to change the camera ISO. The aperture is handled by the ring on the lens, which has two raised textured handles and is easy enough to

Fujifilm X100VI Compact



4

One of the X100VI's highlights is the hybrid optical viewfinder: in use, it's a great experience.

7

There are two dials on the top, one handles exposure compensation, and the other shutter speed.

5

If you prefer an electronic viewfinder, a flick of a switch turns the screen to a 3.69m dot OLED EVF.

8

The shutter speed dial has a clever trick where you just lift and twist to set the ISO value.

6

The screen only has a 90° horizontal tilt, limiting its usefulness for filming as you can't flip the screen.

9

Aperture is changed via a ring with two raised handles, which is easy to turn with one finger.



Gareth Bevan



Gareth Bevan

Although our lab tests showed increased noise from the X100VI, many of our test shots were taken at night, and even at ISO 6400 or 12,800, the images were usable.



The lens is compatible with wide and tele lens converters released with the X100V – however, if you want to use filters, you need to purchase a filter adapter ring.

turn with one finger. The lens clicks at each aperture stop are audible if you don't want to take your eye off the viewfinder. But if you just want to point and shoot, you don't have to worry about these – all the dials have an auto setting or you can mix manual with auto to shoot in aperture priority or shutter priority modes. And like other Fujifilm cameras, if you'd prefer some manual control, you can delve into the menu and set the camera up to cycle through aperture and shutter speed using the thumb and finger wheels.

The lens is unchanged from the X100V – although that was an outstanding revision with incredible sharpness. The 23mm focal length is spot on for a compact camera, as it works for travel, street and environmental portraiture, I would have liked a wider aperture to expand low-light performance and creativity with shallow focus. There

is also a control ring on the lens – while you can set this to several different functions in the settings, by default it controls the camera's digital zoom. That's digital zoom, not optical, so the camera will crop the image for a smaller pixel count. Where the X100V's 24.1MP sensor limited the digital cropping's effectiveness, the 40MP sensor in the X100VI seems made for this feature – with 50mm (20MP) and 70mm (10MP) crops still holding a lot of resolution.

The lens is compatible with the existing wide and tele lens converters released alongside the X100V. One frustration for anyone who wants to put a filter on the front of their lens is the additional purchase of a filter adapter ring (AR-X100) – it's also the only way to make the lens water-resistant.

One of the highlights of the X100 series is the hybrid optical viewfinder – one of the last remaining →

“Externally, little has changed from the previous model, but when you have a viral success, you don't rock the boat”

Compact Fujifilm X100VI



Garreth Bevan

optical viewfinders in a world full of EVFs. Due to the rangefinder design, the viewfinder doesn't perfectly line up with the sensor, but there is a digital box projected in the optical viewfinder that shifts depending on shooting distance so you know what is in your shot. It takes some getting used to initially, but after a while becomes second nature. If you prefer to use an electronic viewfinder, a flick of the front level switches it to a 3.69-million-dot OLED EVF.

The screen is a 1.62 million dot LCD panel. Vloggers might be disappointed to hear that the screen still doesn't flip around so that you can see yourself while you record. However, it does tilt by 90 degrees and still sits beautifully flush with the camera body.

One minor quibble with the build is the grip. Though it's more substantial than the X-E4, there isn't a huge amount to cling onto, and your little finger will be lost with what to do with itself.

Performance

The X100V set some lofty expectations with its outstanding image quality, but the X100VI exceeds them. Edge to edge, images are sharp and detailed, with excellent contrast. Fujifilm's colour science is among my favourites and in the standard Provia simulation, colours are pleasing with a good balance of natural colour and saturation. If you don't like that, there are always another 20 simulations to try.

In our lab tests, noise at higher ISOs takes a hit over the X100V due to smaller photosites on this higher megapixel sensor – in reality, this is far less of a noticeable effect. I shot the neon lights of Tokyo at night with this camera and, even at ISO 6400 or 12,800, images from the newer model were usable and didn't look any noisier to the naked eye than from the X100V. Peeping in the corners, there doesn't seem to be any obvious softness or vignetting in jpegs, even when stopped down to f/2.

Autofocus is improved and makes the older model feel significantly slower. On the X100VI, AF is quick and silent and in continuous focus, the camera had no issue holding a focal point as my subject wandered about the frame.

Rival cameras



Fujifilm X100V
£1,199/\$1,399
 A new, sharper lens does justice to the latest sensor, and the tilting touchscreen on the rear makes the X100V much easier to use.
 Reviewed: issue 229



Nikon Z fc
£899/\$957
 A pleasure to operate and it captures quality images to boot. Matching 'SE' lenses complement its good looks.
 Reviewed: issue 247



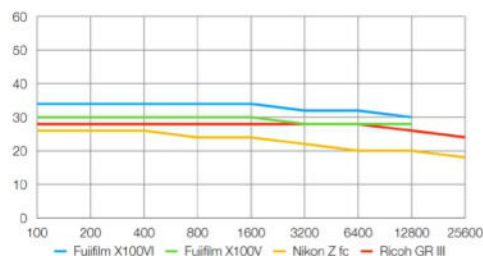
Ricoh GR III
£799/\$899
 The fixed-lens GR III scores top marks for neatness and small size, but loses out for value, performance and handling.
 Reviewed: issue 216



Fujifilm X100VI Compact

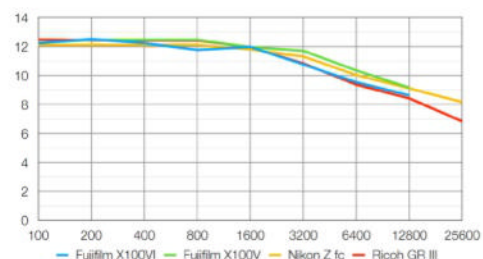
Lab tests

Resolution



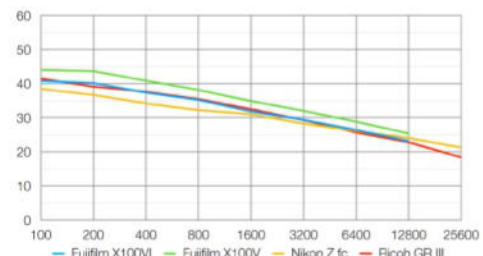
Fujifilm's switch from a 26.1MP to 40.2MP sensor pays dividends when it comes to resolving fine detail. The X100VI leads the pack at all sensitivities and captures noticeably more detail than the X100V.

Dynamic range



At higher sensitivities, the X100VI falls short of the X100V, capturing around 1EV less dynamic range between ISO 3200 and 12,800. Pixel-packed sensors benefit resolution but impact the dynamic range.

Signal to noise ratio (decibels)



The X100VI can't match the X100V for image noise levels. Cramping extra pixels onto the same-sized APS-C sensor means each photosite (pixel) is smaller, making it more likely to generate noise.

Digital Camera verdict

4.5 ★★★★★ Outstanding



Fujifilm's uber-popular compact returns and while not much has changed externally, inside it's a different story. The new sensor takes the renowned quality of the previous model and pushes it further. Image quality is excellent, autofocus is faster and video has been greatly improved. One sore point is the battery life, which hasn't really improved from the previous model. It's also more expensive than the X100V, and might be more than some are willing to pay for a fixed-lens compact – you'd have to value this design over cheaper but similarly specced cameras.

Gareth Bevan



Gareth Bevan

Video footage is good and at 6K, there was a sharpness to the footage. The IBIS held shots steady, but some jerky movements managed to slip in so you may want to invest in a gimbal.

Images from the X100VI are sharp and detailed, with excellent contrast. Fujifilm's colour science is renowned and the standard Provia simulation colours are pleasing, with a good balance of natural colour and saturation – and there are a further 20 simulations to try.

As well as human faces and eyes, the X100VI's autofocus also now recognises subjects including animals, birds, cars and vehicles. Some of these feel less essential on a 23mm fixed lens camera, but they are good to have. Vehicle tracking worked well in testing.

Battery life continues to be a weak point for the X100 series. It was my main gripe about the X100V, and although the processor is meant to improve efficiency, it hasn't moved the needle that much. In a few intensive days of shooting, I was easily burning through a battery or two, so it's advisable to invest in a few spares.

Film simulations are one of the top selling points for Fuji cameras and Fujifilm has taken the number of film simulations up to 20 – adding the Reala Ace simulation to an X-Series camera for the first time. Film simulations are lots of fun on their own but also a quick and easy way to stylise a photo right out of the camera. For the more creative, they're also a great building block for film recipes to make even more complex and accurate film looks.

Video performance gets a boost from the new sensor and processor. The X100VI tops out at 6K 30p footage, although this has a 1.23x crop, which makes the 23mm lens a 28mm lens (or a 42mm full frame equivalent). The X100VI is also capable of 4K 60p footage without a crop, or 1080p footage up to 240p. Video recording is good – filming at 6K, there is a real sharpness to the footage. The IBIS also managed to hold my static shots steady, and panning was definitely improved, but if video is your priority, there are more suitable cameras. Overall, the X100VI is a great photography camera that also shoots good video when needed. **Gareth Bevan**

“The X100V set some lofty expectations for its image quality; the X100VI exceeds them”

Instant camera Polaroid I-2



Polaroid I-2

£599/\$599

With full manual controls and a huge price tag, is this instant camera worth the big bucks?

www.polaroid.com

When I first heard about the Polaroid I-2, I was thrilled. As a lifelong fan, the idea of a Polaroid camera with full manual control, a high-quality glass lens and a fast aperture was exciting. Could this be a step back towards the quality and performance of the SX-70 and Spectra? The answer is a resounding yes. Not only does the Polaroid I-2 officially feature 'the sharpest-ever Polaroid lens' but its f/8 aperture matches that of the SX-70 – it can even shoot on SX-70 film. And while that iconic camera was limited to exposure compensation, here we have full manual control over the aperture and shutter speed. Throw in a LiDAR autofocus system (albeit at the expense of manual focus) and this is the company's best and most advanced camera ever. The Polaroid I-2 is easily the best instant camera for creative capacity but is it much better than the Polaroid Now+ or even the crosstown rival Instax Square SQ40?

Key features

Polaroid claims this is "the first analog instant camera with built-in manual controls" – the I-2 in a nutshell. This is an almost fully manual camera, enabling you to adjust the shutter speed and aperture. However, what comes as a huge surprise is that (unlike the Spectra and SX-70), there's no option for manual focus. Instead, the I-2 features LiDAR – the 3D laser-based autofocus system that has found its way into drones and camera phones.

The I-2 has five shooting modes: Auto, Shutter Priority, Aperture Priority, Manual and Multi-exposure. These can be accessed and operated via the camera body, using the new LCD screen and the physical controls (including an aperture ring on the lens) or using the great Polaroid app. Exposure isn't just limited to the modes and exposure controls; the

camera boasts a flash sync port that enables you to get creative with supplemental lighting. There's also a tripod thread on the bottom to facilitate the various slow shutter options as well as precise composition.

The 38mm equivalent lens is a glass affair, with a trio of elements, resulting in sharper images than other instant cameras with plastic lenses. It even has a filter thread (49mm) so you can unlock even more versatility in your shots. In addition, while modern Polaroid cameras can accept both i-Type and traditional 600 film, the I-2 can also shoot with SX-70 film – the Polaroid's premium stock, which at ASA160, is slower than the others (both ASA640) and offers richer contrast and tones with finer grain.

Build and handling

Ergonomically the Polaroid I-2 has a lot in common with the Now family, being broadly the same shape and size. It has a similar build quality – a satisfyingly chunky hunk of plastic that feels pretty bomb-proof. However, the addition of manual controls means that the I-2 sees some notable additions. Most prominent are the exposure control dials on the lens, set off in a striking silver and grey finish. The rear of the camera on the right side is home to the new LCD panel, which displays your aperture, shutter speed, shooting mode, film count, light meter and battery level. A new input button is set into the panel, enabling you to interact with the different modes and settings.

Below it are the traditional circular power button and the flash override button, with the red shutter button taking its familiar place on the front of the camera. Here is the only real ergonomic difference from the Polaroid Nows, which have a 'pinch grip' on the right side where you can place your thumb when taking a shot. On the I-2, however, the rear right side mirrors the left, with a sloping body that accommodates the electronics of the LCD screen and additional internals. This means your thumb cannot sit directly behind the shutter button, potentially offering less purchase while holding the camera.

The viewfinder is large and clear, though obviously as a non-SLR it does not truly represent what the camera lens actually sees. So, to help offset this, the finder has a target area set to the top-right of the scene to indicate what will be within the lens's field of view, to help better compensate for the parallax and aid composition. Helpfully, the viewfinder also displays the same information as the LCD panel – shooting mode, exposure, metering and so on – enabling you to stay aware of what your settings are without having to constantly look away and check the screen.



1
The I-2 is an instant camera with built-in manual controls.

2
The lens features a filter thread (49mm) for more versatility.

3
The LCD panel displays info, such as aperture, mode and battery level.

Instant camera

Specifications

Film type: Polaroid i-Type, Polaroid 600, Polaroid SX-70

Lens: 98mm f/8 (38mm full-frame equivalent), 49mm filter thread

Shutter speed: 1/250-30 sec (Bulb mode: 99 hours)

Flash: Automatic (with override) 2.5m at f/8

Tripod mount: Yes

Connectivity: USB-C (charging), Bluetooth, 2.5mm flash sync port

Power: USB-rechargeable lithium-ion battery

Dimensions: 149.9 x 119.3 x 91.2mm

Weight: 1,260g



The I-2's lens gives some super-sharp results and its manual options are a revelation. If you want to shoot creative images or the best possible quality from your instant photography, this is the best tool for the job.

Performance

To test the Polaroid I-2, I shot a bunch of packs of film side by side with the Polaroid Now+ Gen 2 for comparison. I wanted to see the differences between the £600/\$600 I-2 and the £140/\$150 Now+ to see whether this really is Polaroid's best-ever camera. First, that lens: it is indeed very sharp. With regular packs of 600 and i-Type, it gave me some super-sharp results – which I know is in equal parts due to the glass lens elements and the accuracy of the LiDAR autofocus.

I would have liked the option for manual focus, however, given that this is a viewfinder camera (and not an SLR, like the SX-70), that would mean we'd need a distance-based manual focus system like the Spectra. And since that was a lot more estimation than actual focusing, I'm happy to live without it.

The manual options here, however, are an absolute revelation. It's the equivalent of taking your mirrorless camera off Auto mode and getting rid of the pop-up flash. Being able to shoot wide open, even at f/8, means that depth of field is now a thing. Being able to adjust the shutter speed means that you can drag the shutter, shoot streaky car headlights and even light paint. Being able to change the film (from 600/i-Type to SX-70) means you can change the film speed (from ASA640 to ASA160) to change the quality and accommodate the light. You can even shoot with off-camera flash or strobes.

More than just depth of field, the I-2's f/8 aperture has another huge advantage over the maximum f/11 of the Polaroid Now+: basic light transmission. When shooting outdoors, the I-2's images came out fine while the Now+ images were almost completely black. I should also mention the brilliant Polaroid app, which automatically pairs with the camera the moment you turn on the I-2. It gives you full control over the modes and exposure settings and also gives you a countdown when shooting on the self-timer (unlike the Now+, if you don't want to use the app, you can still access all the camera's features).



The Polaroid app automatically pairs with the I-2 when you turn it on, giving control over modes and exposure settings, plus a self-timer countdown.



The I-2's manual options are a revelation – the equivalent of taking your mirrorless camera off Auto mode and getting rid of the pop-up flash.

For all its home runs, the I-2 does whiff a few pitches. First of all, there's no macro mode; secondly, the close focusing isn't that great and there isn't much space between the bottom of the lens and the part of the body that houses the film, which limits the kinds of filters you can attach to the 49mm thread. Not that many will want to, but you won't have quite the flexibility you might have imagined.

On the subject of confined space, depending on the kind of tripod plate you have, you might not be able to open the film door. Two of my plates are fine but the third is slightly too big, meaning I needed to unscrew the camera to change the film cartridge. And finally, the camera sometimes exposes towards green. I would have thought this was a characteristic of the film; it's not like you can adjust the white balance or hue on a film camera. Nonetheless, on two different packs of film, images had a green hue – both with and without flash. Very strange! **James Artaius**

Verdict

5.0 ★★★★★ A best-in-class product



The I-2 is the best camera Polaroid has ever made. It's also the best instant camera for anyone who wants to create with as much freedom as a mirrorless camera. The £600/\$600 price tag is high for an instant camera – but the I-2 isn't meant to be compared to an Instax Square or even to a Polaroid Now, because they do completely different things. If all you want to do is take simple snaps with your friends at the beach or with your family on a day out, this camera is total overkill. However, if you want to shoot creative images, if you're a professional user or want the best possible quality from your instant photography, this is the best tool for the job. In fact, it's the only tool for the job.

Zoom lens Canon RF 24-105mm f/2.8L IS USM Z



Canon RF 24-105mm f/2.8L IS USM Z

£3,440/\$2,999

A standard lens is reborn

www.canon.co.uk

Is there a more unexciting lens than a standard zoom? For years, the choice has been limited to a 24-105mm f/4 or 24-70mm f/2.8, but with only marginal improvements to each new generation, it's hard to get too excited. Canon promised much when it launched the RF mount, its RF 28-70mm f/2L USM being one of the few revolutionary standard zooms. Things then went quiet, but now we have the Canon RF 24-105mm f/2.8 IS USM Z...

Key features

This is a 24-105mm lens with a constant f/2.8 aperture, which has been the dream of many photographers. This one comes with a twist; instead of being a photography lens that is also good for video, Canon has made a true hybrid lens. The company says it is intended as the first in a new line of hybrid lenses, but that they shouldn't be referred to as Z-line or Z lenses. The Z in the name stands for 'zoom', or rather 'power zoom', but isn't to be confused with other PZ or PTZ cameras. The lens doesn't have power zoom built in, instead requiring a Power Zoom Adapter for any assisted zooming functions. Canon has you covered, also announcing the PZ-E2 (with USB-C input) and the PZ-E2B, with an extra 20-pin connector for additional accessories. It seems this lens is trying to offer a lot – but is it a jack of all trades and master of none?

Build & handling

There is no getting around that the Canon RF 24-105mm f/2.8 IS USM Z is a big lens, making the Canon RF 24-105mm f/4L IS USM look almost compact in comparison. Designed as a hybrid lens to straddle the world of stills lenses and cine lenses, stills-only photographers might find the length surprising. Shooting out and about with this lens, I couldn't help feeling a little awkward

1 The focus ring has been moved up front, with a wider texture.

2 There's a switch to select static, panning or general OIS.

3 The Z stands for 'zoom' but there's no built-in power zoom.



This is the first in a new line of Canon hybrid lenses, straddling the worlds of stills and cine, but some photographers may find its size rather restrictive.



The 24-105mm range covers most photographers' needs, from wide landscapes at the 24mm end to a mid-telephoto length that's perfect for portraits.

when taking 24mm landscape shots – it may even be too big for photographers.

The 24-105mm f/2.8 goes long but doesn't have much more girth to it than Canon's other lenses. Due to its extended length and intended hybrid use, the RF 24-105mm f/2.8 comes with a tripod foot as standard, which was perfectly balanced with the Canon EOS R5 in testing. The extra size is not only to accommodate the wider aperture but also to fit in the new focus and aperture rings. The focus ring on the 24-105mm f/2.8 has been moved up front, with a wider texture that is slightly different from Canon's other RF L-series lenses.

The lens also packs in optical image stabilisation of up to five stops, going up to a combined eight stops when used with a compatible camera with in-body image stabilisation. The lens offers some additional control over the optical image stabilisation in the same way as Canon's telephoto lenses, with a switch to select static, panning or general-purpose OIS.

The new aperture ring currently only works in video. It is silent and there is no switch to turn the clicks on and off. The aperture ring turns smoothly, although a touch too easily. However, in stills mode, no matter what position the ring is in, the aperture is controlled by the camera dials.

Performance

The 24-105mm range is the standard for many a kit lens, covering everything most photographers need from wide landscapes at 24mm, through to a mid-telephoto length for portraits. Usually, this focal length is perfect for travel or reportage

Zoom lens

Specifications

Mount: Canon RF

Full-frame: Yes

Lens construction: 23 elements in 18 groups

Autofocus: Dual Nano USM

Image stabilisation: 5.5 stops (OIS),

8 stops (OIS + IBIS)

Max aperture: f/2.8

Min aperture: f/22

Diaphragm blades: 11

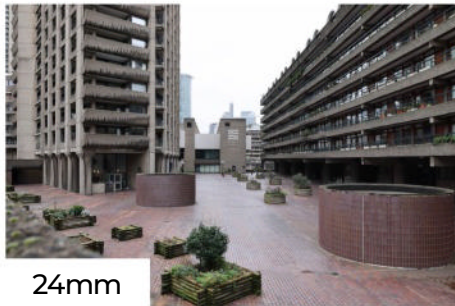
Min focus distance: 45cm

Max magnification: 0.8x (24mm); 0.29x (105mm)

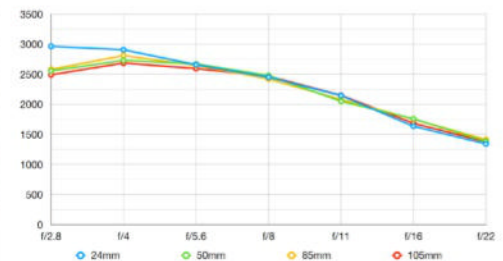
Filter size: 82mm

Size (L x D): 199 x 88.5mm

Weight: 1,350g



Sharpness is outstanding throughout the zoom range, only displaying corner softness at the 105mm end. However, barrel distortion is huge, showing that like many modern lenses, it relies on in-camera correction.



Sharpness

Sharpness in the centre of the frame is superb for any lens, let alone a zoom, but corner sharpness is a mixed bag. It's good at shorter focal lengths, providing you stop down to f/5.6, but corner sharpness never gets above average at longer focal lengths.

Fringing Short 1.76 Long 1.03

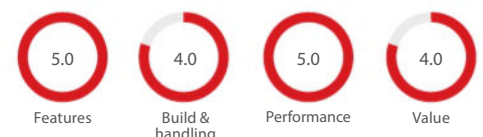
Colour fringing is visible at all tested focal lengths and apertures but most noticeable at 24mm and 85mm. These results were obtained with in-camera correction disabled, so are a 'worst-case' scenario.

Distortion Short -9.12 Long 2.73

With corrections disabled, barrel distortion is huge at 24mm, becoming slight pincushion at 50mm and more pronounced as the focal length increases. Like many modern mirrorless lenses, the RF 24-105mm f/2.8 IS USM Z relies on in-camera corrections.

Verdict

4.5 ★★★★★ Outstanding



The Canon RF 24-105mm f/2.8 IS USM Z is a hybrid lens designed to cater to the needs of both still and video photography and does a decent job at both. The lens is much larger than the 24-105mm f/4 and 24-70mm f/2.8 models and stills photographers might be taken aback by its size. However, it delivers exceptional quality, producing sharp results throughout the zoom range with only minimal softness at the long end. But that price tag will be a major hurdle for all but dedicated professionals.

photographers who need to capture a range of subjects without carrying multiple lenses, although the size of this lens means I'm not sure it fulfils that purpose.

Sharpness is outstanding throughout the zoom range, with near-perfect results in the centre of the frame at every aperture. In the corners, the lens is excellent at apertures of around f/4 and above and, even at f/2.8, it produces impressive results – only the 105mm end shows some softness in the corners. There is some minor vignetting at the wide end, although this doesn't affect the telephoto end – and is nothing that a few simple tweaks in Lightroom won't remove.

For photographers, the big selling point is the f/2.8 aperture in this focal length. This aperture is less prominent at wide angles for background separation but makes for a more effective lens in low-light situations, allowing two more stops than the equivalent Canon RF 24-105mm f/4 lens. Zoom through the focal range and this extra aperture begins to make a difference to the look of your images, with subject isolation that will make any portrait pop.

Canon's Nano USM autofocus system has proved itself many times, but it's worth

repeating how silent and fast it is. With a Canon EOS R5, focusing was speedy, snapping onto focus points quickly. Testing the camera and lens subject recognition on birds and animals, the lens autofocus keeps up. Image stabilisation was also rock steady: when shooting static subjects in low light, I was able to drop the shutter speed at least five or six stops lower than anything I'd attempt without IS and still get a lot of usable shots.

As the first lens in Canon's new hybrid Z range, there are high expectations for video performance and, for anyone serious about video production, this is a fantastic lens. Image quality is as good as it is for stills, with the 4K footage I sampled using the Canon EOS R5 looking clear and detailed. In my videos, panning and static shots handheld are smooth with few jitters. Focus breathing is also well-controlled.

Holding the lens steady handheld is more of a challenge due to its size and weight – after a minute or two, your arms will feel the strain and you'll need to prop this lens on a sturdy video tripod. Luckily, the tripod foot is perfectly balanced with an EOS R5 attached for smooth tilting and movements. **Gareth Bevan**

Zoom lens Sony FE 24-50mm F2.8 G



Autofocus is super-fast for stills and smooth and silent for video. In real-world tests and during our lab testing, AF proved consistently accurate.

Other constant-aperture f/2.8 choices include the Tamron 28-75mm f/2.8 Di III RXD G2 which has a modest weight of 540g and the Tamron 20-40mm F2.8 Di III VXD, which is even lighter at just 365g. The latter is more wide-angle oriented but both of these lenses undercut the FE 24-50mm on price. For further comparison, the simultaneously released Sony FE 16-25mm F2.8 G is also a little lighter, at 409g.

Sony FE 24-50mm F2.8 G

£1,149/\$1,098

Compact standard zoom has compromises

www.sony.co.uk

Sony has been going about its full-frame mirrorless business for over 10 years, racking up 73 E-mount lenses along the way. New for 2024, the FE 24-50mm F2.8 G standard zoom and simultaneously released FE 16-25mm F2.8 G wide-angle zoom aim to be the most compact and lightweight options in the class of full-frame compatible constant-aperture f/2.8 zooms.

So-called 'trinity' wide-angle, standard and telephoto zooms with a constant f/2.8 aperture are highly popular the world over, but they're often bulky, heavy lenses that can feel a bit cumbersome. I often prefer zoom lenses with a slower f/4 aperture, especially for shooting with slinky mirrorless cameras rather than chunky DSLRs, as they're generally more compact and lightweight, as well as being cheaper to buy. The downside is that they're less ideal for freezing motion under dull lighting conditions and can't deliver such a tight depth of field.

The FE 24-50mm F2.8 G is refreshingly lightweight but comes with a compromise in outright zoom range. It has plenty of wide-angle potential, matching the more usual 24-70mm f/2.8 zooms, but can't stretch to anything beyond a standard focal length, which makes it less versatile. I find the maximum focal length can feel limiting, not just for portraiture and still-life photography, but also in plenty of other more general shooting scenarios.

Key features

The FE 24-50mm F2.8 G isn't the first standard zoom to sacrifice zoom range in pursuit of a compact, lightweight design. There's the Canon RF 24-50mm F4.5-6.3 IS STM and the Sony FE 28-60mm F4-5.6 to name but two. But both of these lenses have a narrower, variable aperture rating. While the new lens weighs 440g, the full-size Sony FE 24-70mm F2.8 GM II weighs in at 695g and costs around twice as much to purchase. The Sigma 24-70mm f/2.8 AF DG DN Art is even heavier at 835g but costs around the same as the lightweight FE 24-50mm.

1 There is a keep-clean fluorine coating on the front elements.

2 Compact at 50mm, the inner barrel extends as you zoom out towards the widest setting.

3 The AF-hold button can be customised for other functions.

Design & handling

The big thing about this lens's design is its compact form. It's not just the relatively limited zoom range that helps squeeze the dimensions to 75 x 92mm, along with a relatively small filter thread of 67mm. The lens also has an extending inner barrel, so while it's compact at the 50mm mark, there's a noticeable physical extension as you zoom out towards the 24mm wide-angle setting. Another factor that contributes to the downsizing is the inclusion of four aspherical elements, which helps reduce optical aberrations. There are also two ED (Extra-low Dispersion) elements to enhance clarity and minimise chromatic aberration.

Everybody likes sharp lenses but, for f/2.8 zooms and faster primes, I feel that the quality of bokeh is also an important factor. This lens delivers a fairly tight depth of field, especially for close-ups, and the minimum focus distance becomes even shorter if you're willing to switch from autofocus to manual focus mode. The quality of bokeh when stopping down a little is helped by a very well-rounded 11-blade aperture diaphragm.

For a small lens, I'm impressed that the Sony FE 24-50mm goes large in terms of handling prowess. Useful features include an aperture control ring, complete with a click/de-click switch, which makes it eminently suitable for both stills and video.

I like the AF-hold button, which can be customised for other functions via camera menus. I'm also pleased to see an extensive set of weather-seals, so rain needn't stop play, and there's a keep-clean fluorine coating on the front element. The overall build quality feels tough and solid, despite the lightweight construction.

Zoom lens

Specifications

Mount: Sony E (FE)
Full-frame: Yes
Lens construction: 4 aspherical, 2 ED elements
Angle of view: 84-47°
Max aperture: f/2.8
Minimum aperture: f/22
Diaphragm blades: 11
Min focus distance: 0.19-0.3m (0.18-0.29m MF)
Max magnification: 0.3x (0.33x MF)
Filter size: 67mm
Dimensions (L x D): 92 x 75mm
Weight: 440g



With



Without

Optically, this Sony lens produces so much barrel distortion in the 24-35mm sector of the zoom range that the images are all but unusable without using the automatic in-camera correction or editing software.



The lens delivers a tight depth of field, especially for close-ups – the minimum focus distance is shorter if you switch to manual focus. The quality of bokeh is helped by a well-rounded 11-blade aperture diaphragm.

Performance

Autofocus is super-fast for stills and delivers smooth, virtually silent transitions for video. That's nothing less than I'd expect from a focus system based on a linear stepping motor. In real-world tests and during our lab testing, autofocus proved consistently accurate. Only the middle group of elements moves during focusing, so the mechanics are fully internal and there's no rotation nor extension of the front element. In terms of outright sharpness, the lens is impressive throughout its entire zoom range, even shooting wide-open at f/2.8. Indeed, our lab test results revealed similar levels of sharpness to those of the much pricier Sony FE 24-70mm F2.8 GM II lens.

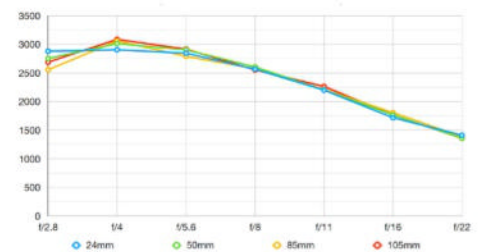
The quality of bokeh is good and smooth and comes to the fore when shooting wide-open towards the long end of the zoom range. Axial chromatic aberration or 'bokeh fringing' is also well controlled.

Lateral chromatic aberration is quite minimal at the short end of the zoom range but can be a little noticeable towards the long end, at least with automatic in-camera correction disabled. Distortion is a different story. Optically, the lens produces so much



It is impressively sharp throughout its zoom range, even at f/2.8. Our tests revealed similar sharpness to the pricier Sony FE 24-70mm F2.8 GM II lens.

barrel distortion in the 24-35mm sector of the zoom range that it's all but unusable without automatic correction. Indeed, the in-camera correction for distortion can't be switched off in the menu, nor when editing raw files in Sony's supporting Imaging Edge Desktop software. If you use a third-party app such as Adobe Lightroom or Photoshop, a lens profile update should be along soon after the lens's launch date. The pair of wide-angle shots (above) show the difference between automatic correction being applied, and processing raw images with no correction. **Matthew Richards**



Sharpness

Throughout the modest zoom range, sharpness is excellent across most of the image frame, even when shooting wide-open at f/2.8, and holds up well at the extreme edges and corners. There's the typical drop-off at narrow apertures due to diffraction.

Fringing Short 0.18 Long 0.67

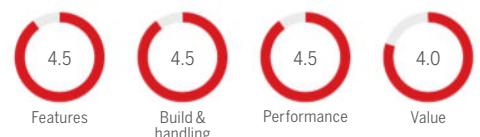
There's minimal lateral chromatic aberration in the 24-28mm range, even at the edges and corners of the frame, although it creeps up towards the long end. Automatic in-camera correction is available.

Distortion Short -8.28 Long -1.88

It is all but unusable without automatic in-camera correction. Although our lab tests reveal the extreme extent of barrel distortion when uncorrected, with an in-camera fix applied, there's virtually no distortion in the images once in-camera correction does its job.

Verdict

4.5 ★★★★★ Outstanding



The Sony FE 24-50mm F2.8 G is small and weighs a mere 440g, making it easy to live with for an f/2.8 constant-aperture standard zoom. The handling is great, with its click/de-click aperture ring and customisable AF-hold button, and the lens is well-built with a comprehensive set of weather-seals and a fluorine coating on the front element. It is missing a stretch beyond a 50mm focal length but, if you're into standard and wide-angle photography, this comparatively small lens is a smart buy.



Buyer's guide

Use our real-world testing scores from across the market to purchase your next camera with confidence

● DSLR & MIRRORLESS CAMERAS PLUS: Our best-buy accessories

Sensor sizes at a glance

Three formats dominate DSLR and mirrorless cameras...



Full-frame (36 x 24mm)

These imaging sensors have similar proportions to a frame of 35mm film.



APS-C (≈ 25.1 x 16.7mm)

Based on the Advanced Photo System film format from the 1990s.



Micro Four Thirds (17.3 x 13mm)






The 4:3 aspect ratio allows smaller and lighter lenses to be used.

DSLRs

| | PRODUCT | PRICE WHEN TESTED | SENSOR SIZE/RESOLUTION | CONTACT | REVIEWED |
|--|----------------------|--|------------------------|-----------------|-----------|
| | Canon EOS 4000D | £370/\$n/a | APS-C, 18MP | www.canon.co.uk | Issue 205 |
| | ★★★★☆ | A great but basic beginner DSLR. At just £370 (body only), it's the cheapest EOS DSLR. Sadly, it's let down by a cheap kit lens that's tough to tolerate, so we suggest buying the better IS lens. | | | |
| | Canon EOS 2000D | £349/\$479 | APS-C, 24.1MP | www.canon.co.uk | Issue 206 |
| | ★★★★☆ | A better-spec camera than the 4000D but with a modest price bump. Arguably, it's worth the extra outlay but, for an extra £200, the EOS 250D is a far better DSLR camera (Rebel T7 in USA). | | | |
| | Canon EOS 250D | £549/\$649 | APS-C, 24.1MP | www.canon.co.uk | Issue 217 |
| | ★★★★☆ | Sold as the Rebel SL3 in the USA, we think it's the best budget/beginner DSLR with the perfect blend of power and value. Move beyond snapping with smartphones to taking proper photos. | | | |
| | Canon EOS 850D | £919/\$749 | APS-C, 24.1MP | www.canon.co.uk | Issue 236 |
| | ★★★★☆ | Lightweight & powerful, the EOS 850D/Rebel T8i captures detailed, colourful and sharp images, plus 4K movies. Features iTR Face and Eye Detection AF, and Auto AF via optical viewfinder. | | | |
| | Canon EOS 77D | £710/\$550 | APS-C, 24.1MP | www.canon.co.uk | Issue 193 |
| | ★★★★☆ | Key specs are identical to the 800D but extra controls (a top-plate LCD and a rear control wheel) make dialling in exposure settings quicker. Super image quality – even at high ISOs. | | | |
| | Canon EOS 90D | £1,299/\$1,199 | APS-C, 32.5MP | www.canon.co.uk | Issue 221 |
| | ★★★★☆ | This impressive crop-camera comes with a 32.5MP sensor, rapid 10fps continuous shooting and 4K video, plus improved handling and decent AF. An ideal APS-C upgrade for enthusiasts. | | | |
| | Canon EOS 7D Mark II | £1,050/\$725 | APS-C, 20.2MP | www.canon.co.uk | Issue 159 |
| | ★★★★☆ | Action-packed APS-C format EOS camera has 65-point AF with advanced tracking, 10fps continuous shooting, dual DIGIC 6 processors and GPS in a tough, magnesium alloy bodysell. | | | |
| | Canon EOS 6D Mark II | £1,399/\$1,399 | Full-frame, 26MP | www.canon.co.uk | Issue 194 |
| | ★★★★☆ | World's smallest full-frame DSLR gets a major upgrade over the original 6D with improved speed and performance. It's a great all-rounder now, thanks to an improved AF system and burst rate. | | | |
| | Canon EOS 5D Mark IV | £2,869/\$2,699 | Full-frame, 30MP | www.canon.co.uk | Issue 183 |
| | ★★★★☆ | The pro-level, weather-sealed, full-frame EOS 5D Mk IV has a hi-res 30MP sensor and 7fps frame rate. Specs include 4K video, touchscreen LCD, Wi-Fi and NFC connectivity, and GPS. | | | |
| | Canon EOS 5DS (DS R) | £2,999/\$3,699 | Full-frame, 50.6MP | www.canon.co.uk | Issue 167 |
| | ★★★★☆ | A 50MP DSLR which delivers huge and amazingly detailed hi-res images. The more expensive 5DS R (£3,199/\$3,899) adds a low-pass cancellation filter for marginally sharper shots. | | | |

Seen something that doesn't look right? Email us at digitalcamera@futurenet.com with 'Camera Guide' in the subject line

DSLRs (CONTINUED)

| PRODUCT | PRICE WHEN TESTED | SENSOR SIZE/RESOLUTION | CONTACT | REVIEWED |
|--|-------------------|------------------------|-------------------|--------------|
|  Canon EOS-1D X Mk III ★★★★★ The ultimate hybrid DSLR/mirrorless. Superb low-light performance up to ISO 102,400, plus Deep Learning AF and 5.5K Raw video. It can also capture up to 20fps in Live View mode. | £6,999/\$6,499 | Full-frame, 20.2MP | www.canon.co.uk | Issue 227 |
|  Nikon D7500 ★★★★★ Steals most of the best bits from the now-discontinued pro-grade D500 and squeezes them into a smaller, lighter body at a much more affordable price. Superb image quality, great value. | £1,049/\$997 | APS-C, 20MP | www.nikon.co.uk | Issue 193 |
|  Nikon D780 ★★★★★ Highly capable and entirely natural-feeling DSLR for shooting stills in viewfinder mode with good Live View, too. Despite its strong credentials, it looks overpriced compared with the Z 6II. | £2,299/\$2,297 | Full-frame, 24.5MP | www.nikon.co.uk | Issue 227 |
|  Nikon D850 ★★★★★ Can turn its hand to pretty much anything; capable of stunning images with immense detail. For Live View and video capture, however, the contrast-detection AF system is inferior to Nikon Z's. | £2,799/\$2,997 | Full-frame, 45.7MP | www.nikon.co.uk | Issue 196 |
|  Nikon D6 ★★★★★ Geared mostly towards action, sports and wildlife photography, the D6 is a high-performance 20.8MP DSLR. Stills performance is superb with a fast continuous drive rate and AF system. | £6,799/\$6,497 | Full-frame, 20.8MP | www.nikon.co.uk | Issue 231 |
|  Pentax K-70 ★★★★★ Very much a camera of two halves – the K-70's weighty body and design quirks won't be to everyone's taste, but plenty of top features and great results make it worth considering. | £829/\$647 | APS-C, 24MP | https://pentax.eu | Issue 186 |
|  Pentax KF ★★★★★ Well-made DSLR but essentially a relaunch of the K-70. The merits of this camera's autofocus system will be lost unless you are using a newer Pentax lens with an SDM, DC or PLM AF motor. | £849/\$847 | APS-C, 24MP | https://pentax.eu | Issue 268 |
|  Pentax K-3 Mark III ★★★★★ Fast, powerful and packed with clever features, but also oddly dated, as if Pentax has stepped back from modern innovations like on-sensor phase detect autofocus and vari-angle screens. | £1,899/\$1,999 | APS-C, 26MP | https://pentax.eu | Issue 247 |
|  Pentax K-3 III Monochrome ★★★★★ Based on the flagship K-3 Mark III and sporting a brand-new redesigned and optimised sensor, the K-3 III Monochrome lacks a colour filter and offers three dedicated B&W shooting modes. | £2,249/\$2,199 | APS-C, 25.7MP | https://pentax.eu | Not reviewed |
|  Pentax K-1 Mark II ★★★★★ Initially looks and feels like a throwback to an earlier time but its blunt, weighty handling and solid, intelligent controls provide relief from today's touchscreens and digital miniaturisation. | £1,799/\$1,997 | Full-frame, 36.4MP | https://pentax.eu | Issue 204 |
|  Pentax 645Z ★★★★★ Extraordinarily well-built with excellent ergonomics for its size and supported by a lens system that boasts 16 different optical options. Pricy when compared to Fujifilm's GFX 50S II. | £6,800/\$8,500 | Medium-format, 51MP | https://pentax.eu | Issue 164 |

**Wise buys
Landscape
lenses**

Good, better and best... three optics for shooting sceneries



Sigma 14-24mm f/2.8 DG HSM

Price: £1,269/\$1,299
Verdict: Well-made and optically excellent, this lens for Canon and Nikon DSLRs is a real bargain. Sharpness is



Canon RF 15-35mm f/2.8L IS USM

Price: £2,389/\$2,399
Verdict: Its 35mm reach offers extra flexibility for shooting landscapes, and it features an optical image stabiliser worth up to five stops.



Nikkor Z 14-24mm f/2.8 S

Price: £2,385/\$2,397
Verdict: Comes with all the bells and whistles: phenomenal sharpness, a customisable control ring, an assignable function button and a multi-function display.

What to look for in a... DSLR

Lens release To remove the lens, press the button and twist the lens anti-clockwise. Use the protective body cap, so you don't leave the sensor exposed to dust.

Shutter release To shoot, press the shutter release button. To focus and meter the scene, half press the shutter release.

Lens A DSLR is far more versatile than a camera with a fixed lens because you can change lenses and alter the angle of view.

Sensor This is where your images are recorded before being processed and stored on your memory card.

Mode dial The mode dial is where you access the camera's shooting modes. For first-time users, the fully Auto mode selects all the camera settings for you.

Hotshoe To attach a flashgun, slot it into place and tighten the catch on the device.

Command dial The command dial is used to alter camera settings and adjust features.

LCD screen This displays images while composing and shooting information. Some DSLRs have a vari-angle LCD screen.

Back panel controls A handy feature used to alter settings and navigate menus. Some cameras have a joystick multi-controller.

Viewfinder To compose an image, look through the viewfinder on the back panel.

Menu button Access shooting, reviewing and other menu options, and use the multi-controller and the OK button to navigate and select.



Connection points To connect your camera to another device, insert the cable into the correct port. You can also connect to a remote shutter release here.

Flash Beginner models and some enthusiast DSLRs include a built-in pop-up flash unit.

Memory card slot Some DSLRs include a memory card slot on the bottom of the camera in the battery compartment.

Camera buyer's guide

Wise buys
Tripod heads

Good, better and best... three heads for stable shooting



Vanguard Veo 2 BH-50 ball head

Price: £69/\$70
Verdict: An inexpensive and compact ball head. The Veo 2 BH-50 has a separate panning axis and a 'universal' Arca-Swiss style, quick-release plate.



Manfrotto XPro 3-Way Head

Price: £94/\$116
Verdict: Precision and control – and more bulk – the XPro's stubby handles keep the size down but can be extended when needed.



Arca Swiss D4 tripod head

Price: £960/\$1,142
Verdict: Combines a ball mechanism with geared axis movements when required, plus a second pan axis below the camera plate for level panorama shoots.

MIRRORLESS

| | PRODUCT | PRICE WHEN TESTED | SENSOR SIZE/RESOLUTION | CONTACT | REVIEWED |
|--|-----------------------|-------------------|------------------------|-----------------|-----------|
| | Canon EOS M50 Mark II | £589/\$599 | APS-C, 24.1MP | www.canon.co.uk | Issue 242 |
| | Canon EOS M5 | £780/\$n/a | APS-C, 24.2MP | www.canon.co.uk | Issue 188 |
| | Canon EOS R100 | £670/\$600 | APS-C, 24.1MP | www.canon.co.uk | Issue 271 |
| | Canon EOS R50 | £789/\$679 | APS-C, 24.2MP | www.canon.co.uk | Issue 267 |
| | Canon EOS R10 | £899/\$979 | APS-C, 24.2MP | www.canon.co.uk | Issue 259 |
| | Canon EOS RP | £1,049/\$999 | Full-frame, 26.2MP | www.canon.co.uk | Issue 214 |
| | Canon EOS R7 | £1,349/\$1,499 | APS-C, 32.5MP | www.canon.co.uk | Issue 258 |
| | Canon EOS R8 | £1,649/\$1,499 | Full-frame, 24.2MP | www.canon.co.uk | Issue 266 |
| | Canon EOS R6 Mark II | £2,779/\$3,599 | Full-frame, 24.2MP | www.canon.co.uk | Issue 264 |
| | Canon EOS R5 | £4,299/\$3,899 | Full-frame, 45MP | www.canon.co.uk | Issue 233 |
| | Canon EOS R3 | £5,659/\$5,999 | Full-frame, 24.1MP | www.canon.co.uk | Issue 248 |

What to look for in a... **Mirrorless CSC**

Interchangeable lenses

Like a DSLR, a compact system camera (CSC) doesn't feature a fixed lens. Instead, you can swap between lenses depending on the subject you are shooting or the effect you want to achieve. The lens mounts on CSCs are different to those on DSLRs, which means you can't use DSLR lenses on a CSC without purchasing an adapter to 'bridge' the two mounts.

Look, no mirror!

The most significant difference between a DSLR and a compact system camera is the lack of a mirror. Not only does this allow CSCs to be much smaller and lighter, but it also means they're much quieter in operation. As there is no mirror to reflect the sensor view in a CSC, you will have to use the Live View monitor or an electronic viewfinder instead while composing shots.

Pocketability

Compact system cameras are smaller than the majority of DSLRs. Rangefinder-style CSCs are more pocketable than those styled like compact DSLRs but the grip and handling of the latter can be an advantage.

Viewfinder – or not

The lack of a mirror means CSCs don't have an optical TTL (through the lens) viewfinder but many DSLRs boast a built-in electronic viewfinder (EVF), a small screen showing the Live View. Others can be fitted with a small viewfinder accessory on the hotshoe.

Light path

In a DSLR, some light passes through the mirror to the AF sensor, but the majority is reflected up to the pentaprism, exposure meter and viewfinder assembly. This system takes up a lot of space, though.

Flange Focal Distance

The FFD in a CSC is significantly shorter than in a DSLR. For example, Canon's EF and EF-S DSLR mounts have an FFD of 44mm, whereas the Q mount used in Pentax's CSC range uses a distance of just 9.2mm.

Electronic display

In a CSC, the light strikes the sensor, and an image is generated on the rear screen and electronic viewfinder, if present. This means that the body can be much slimmer and shorter in height.



MIRRORLESS (CONTINUED)

| | PRODUCT | PRICE WHEN TESTED | SENSOR SIZE/RESOLUTION | CONTACT | REVIEWED |
|---|---------------------|--|------------------------|------------------|-----------|
|  | Fujifilm X-E4 | £799/\$849 | APS-C, 26.1MP | www.fujifilm.com | Issue 243 |
| | ★★★★★ | While its small size and design doesn't make it quite as versatile as the Fujifilm X-T4, the X-E4 is capable of producing the same quality images and is easy to carry everywhere. | | | |
|  | Fujifilm X-H2 | £1,899/\$1,999 | APS-C, 40.2MP | www.fujifilm.com | Issue 261 |
| | ★★★★★ | An extremely compelling camera at an equally compelling price. With its 40MP resolution and 8K video, the X-H2 takes on some full-frame big guns at half the price. | | | |
|  | Fujifilm X-H2S | £2,499/\$2,499 | APS-C, 26.1MP | www.fujifilm.com | Issue 258 |
| | ★★★★★ | With double the processing power of its predecessor, it offers a class-leading 40fps continuous shooting with full autofocus functions. A terrifically powerful companion for sports and wildlife. | | | |
|  | Fujifilm X-Pro3 | £1,699/\$1,999 | APS-C, 26.1MP | www.fujifilm.com | Issue 225 |
| | ★★★★★ | With its rangefinder design, the Fujifilm X-Pro3 recaptures the purity and joy of taking photographs. However, this can sometimes impede your ability to shoot in a modern way. | | | |
|  | Fujifilm X-S10 | £949/\$999 | APS-C, 26.1MP | www.fujifilm.com | Issue 238 |
| | ★★★★★ | The excellent finish, build quality and handling, plus the inclusion of IBIS, give the X-S10 perhaps the best combination of performance, quality and value in the APS-C mirrorless camera market. | | | |
|  | Fujifilm X-S20 | £1,249/\$1,299 | APS-C, 26.1MP | www.fujifilm.com | Issue 271 |
| | ★★★★★ | The perfect camera for most people, with its straightforward controls, excellent fully automatic modes and its small and compact size, the X-S20 is the hybrid camera to beat. | | | |
|  | Fujifilm X-T30 II | £769/\$899 | APS-C, 26.1MP | www.fujifilm.com | Issue 251 |
| | ★★★★★ | Fujifilm's pint-sized retro camera doesn't just look cool but works well, too, with old-school shutter speed and aperture dials. However, the lack of in-body stabilisation is a shame. | | | |
|  | Fujifilm X-T4 | £1,549/\$1,699 | APS-C, 26.1MP | www.fujifilm.com | Issue 231 |
| | ★★★★★ | The X-T4 gains the in-body image stabilisation that the X-T3 lacks and also brings a vari-angle screen and a faster, quieter shutter mechanism. The improvements to this camera are welcome. | | | |
|  | Fujifilm X-T5 | £1,699/\$1,699 | APS-C, 40.2MP | www.fujifilm.com | Issue 263 |
| | ★★★★★ | Takes the much-loved Fujifilm X-T4 further in terms of resolution but is still ideal for shooters who want a lightweight camera with traditional controls and an excellent 40.2MP resolution. | | | |
|  | Fujifilm GFX 50S II | £3,499/\$3,999 | Medium-format, 51MP | www.fujifilm.com | Issue 248 |
| | ★★★★★ | The lack of 4K video won't endear it to all, but if speed and video aren't important then the advantages of a medium-format sensor can be had for a far more affordable price than before. | | | |
|  | Fujifilm GFX 100S | £5,499/\$5,999 | Medium-format, 102MP | www.fujifilm.com | Issue 241 |
| | ★★★★★ | Far more accessible and more ready for broader use cases than traditional medium-format cameras. Any compromises made to produce the GFX 100S have not affected its performance. | | | |

Wise buys Neutral density filters

Good, better and best... three options for long exposures



SRB ND 1000
Price: £32/\$44 (67mm)
Verdict: If you don't want the fuss of a full square filter system, this 10-stop circular ND filter is perfect. In our tests, we saw a slightly warm colour cast but that can be corrected.



Formatt Hitech Firecrest Ultra Circular 3.0 (10-stop)

Price: £146/\$158
Verdict: Offers a step up in construction and quality, with excellent colour fidelity in photographs.



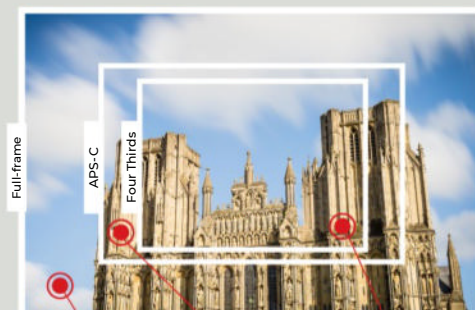
Lee ProGlass IRND 100mm 10-stop filter
Price: £179/\$237
Verdict: Designed for the ultimate in neutrality and colour accuracy by a renowned brand with a legendary reputation.

Camera tech: Crop factors explained

Full-frame sensors provide the standard by which all other sensors can be compared

While the majority of interchangeable lenses are designed to fill the proportions of a full-frame sensor, plenty of digital cameras use sensors that are smaller than full-frame (see page 107). As they are exposed to a smaller part of the picture projected by a lens, smaller sensors produce a magnification effect, with the 'cropped' image looking as though it has been taken with a longer lens.

The focal length of the lens hasn't increased – a 50mm lens is a 50mm lens, regardless of the camera it's attached to – but the 'crop factor' of the sensor makes it appear that it has. Other differences that the sensor size makes include the larger pixels gathering light more efficiently so you'll get cleaner, better-quality images at high ISO settings. Plus, it's easier to exploit shallow depth-of-field effects, so that images have more blur and less sharpness.



Full Frame
 No adjustment is necessary with a full-frame sensor – the focal length on the lens is what you get.
Crop factor: 1

APS-C
 Most APS-C sensors have a crop factor of 1.5, although with Canon APS-C cameras, it's 1.6.
Crop factor: 1.5 or 1.6

Micro Four Thirds
 To get a 20mm equivalent view, you need a lens that has a focal length of 10mm.
Crop factor: 2

Camera buyer's guide

Wise buys
Travel tripods

Good, better and best... three options you can depend on



Benro Slim Travel

Price: £69/\$114
Verdict: Folding down to just 32cm and with a maximum height of 130cm, the aluminium edition is great value, and the carbon version is not too pricey at £125/\$150.



Manfrotto Befree 2N1

Price: £139/\$219
Verdict: Like the Benro, the 2N1 also converts into a monopod. It's taller at 150cm (41cm when folded), but is only available in aluminium.



3 Legged Thing Punks Brian

Price: £269/\$300
Verdict: With a beefy 14kg load rating, the carbon-fibre Brian stretches to a towering 187cm, yet still folds down to 41cm.

MIRRORLESS (CONTINUED)

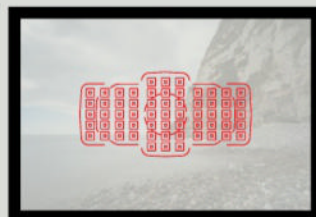
| | PRODUCT | PRICE WHEN TESTED | SENSOR SIZE/RESOLUTION | CONTACT | REVIEWED |
|--|---------------------|---|------------------------|------------------|-----------|
| | Fujifilm GFX 100 II | £6,999/\$7,499 | Medium-format, 102MP | www.fujifilm.com | Issue 277 |
| | ★★★★★ | A revelation – should be the catalyst for every full-frame professional portrait, fashion, product and landscape photographer who might be wavering over jumping to a medium-format setup. | | | |
| | Leica SL2 | £5,300/\$5,995 | Full-frame, 47MP | leica-camera.com | Issue 224 |
| | ★★★★☆ | Likely to be sold in small numbers to connoisseurs and certain discerning pros, this is no overpriced toy. It incorporates a level of design and thought that is rather inspiring. | | | |
| | Leica SL2-S | £3,975/\$4,895 | Full-frame, 24MP | leica-camera.com | Issue 240 |
| | ★★★★☆ | Costs much less than the higher-resolution SL2 but even with such a drastic difference in price, the compromises are minimal, and the drop in resolution is the only major downside. | | | |
| | Nikon Z 30 | £699/\$707 | APS-C, 20.2MP | www.nikon.co.uk | Issue 260 |
| | ★★★★☆ | Aimed at vloggers, for which the vari-angle touchscreen works much better than the tilting screen of the Z 50. The lack of an EVF isn't such good news if you primarily shoot stills. | | | |
| | Nikon Z 50 | £899/\$857 | APS-C, 20.9MP | www.nikon.co.uk | Issue 225 |
| | ★★★★★ | Small and simple but power-packed, the Z 50 is capable of fabulous results. The slimline build brings the benefits of mirrorless; firmware updates have added Eye-Detection AF capabilities. | | | |
| | Nikon Z fc | £899/\$957 | APS-C, 20.9MP | www.nikon.co.uk | Issue 247 |
| | ★★★★☆ | Far from a case of style over substance, this DX-format Z camera is a pleasure to operate and captures quality images to boot. Matching 'SE' lenses complement its good looks. | | | |
| | Nikon Z 5 | £1,349/\$1,397 | Full-frame, 24.3MP | www.nikon.co.uk | Issue 234 |
| | ★★★★☆ | Nikon's most affordable FX Z camera still boasts plenty of top-notch features including IBIS, the EXPEED 6 processor and dual card slots. Great image quality and 273-point hybrid autofocus. | | | |
| | Nikon Z 6II | £2,079/\$1,997 | Full-frame, 24.5MP | www.nikon.co.uk | Issue 237 |
| | ★★★★☆ | Delivers superb quality for stills and 4K video, and is a brilliant all-rounder, too. With fewer megapixels to process, the Z 6II beats the Z 7II with a 14fps rather than 10fps drive mode. | | | |
| | Nikon Z 7II | £3,099/\$2,997 | Full-frame, 45.7MP | www.nikon.co.uk | Issue 239 |
| | ★★★★☆ | Matches Nikon's similarly priced D850 for megapixels but especially when shooting handheld and for capturing movies, the Z 7II can yield even better results, thanks to features like IBIS. | | | |
| | Nikon Z 8 | £3,999/\$3,999 | Full-frame, 45.7MP | www.nikon.co.uk | Issue 270 |
| | ★★★★☆ | The 'baby Z 9' inherits the vast majority of its sibling's specs, including its blisteringly fast electronic shutter and EXPEED 7 processor, in a more compact and manageable body. | | | |
| | Nikon Z 9 | £5,299/\$5,497 | Full-frame, 45.7MP | www.nikon.co.uk | Issue 250 |
| | ★★★★☆ | The flagship Z series camera uses an electronic shutter to blow the D6 DSLR out of the water for resolution, speed and all-round performance. The Z 9 also boasts Nikon's best video specs. | | | |

Camera tech: AF points explained

The amount of autofocus points varies between cameras – but in short, the more you pay, the more you get

Entry-level DSLRs have around seven to nine AF points, whereas a high-end mirrorless, such as the Canon EOS R3, has 4,779. Cameras that offer a densely populated array of AF points across the viewfinder make it easier to focus on subjects that aren't in the centre of the picture.

A large number of AF points also makes for smoother focus tracking, as the camera can 'hand off' autofocus from one point to the next and more accurately follow a subject moving across the picture.



AF point array

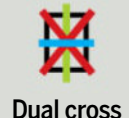
AF points are clustered towards the centre of a DSLR viewfinder. An AF point array typically contains standard AF sensors that measure sharpness in one plane and 'cross-type' AF sensors that are more precise.



How they work

The AF sensor detects a line of contrast that 'breaks' the line of the sensor – such as the horizon here. The AF system pushes the lens's focusing back and forth until the active sensor is able to find this high-contrast point.

Types of AF point
Beginner cameras may have one cross-type point, whereas high-end models have many. Dual cross points are the most powerful.



MIRRORLESS (CONTINUED)

| | PRODUCT | PRICE WHEN TESTED | SENSOR SIZE/RESOLUTION | CONTACT | REVIEWED |
|---|-----------------------|---|---------------------------|----------------------|--------------|
|  | Olympus PEN E-P7 | £749/\$799 | Micro Four Thirds, 20MP | explore.omsystem.com | Issue 245 |
| | ★★★★★ | A fantastic return to form for the PEN series – so stylish that you can take it anywhere, so simple that beginners can use it and so capable that experts can get sensational results from it. | | | |
|  | Olympus OM-D E-M10 IV | £799/\$799 | Micro Four Thirds, 20MP | explore.omsystem.com | Issue 235 |
| | ★★★★☆ | With a 20MP sensor, improved IBIS and a flip-down and tiltable screen, the E-M10 Mark IV offers plenty of new features, while retaining the Mark III's 4K video and attractive styling. | | | |
|  | OM System OM-1 | £1,999/\$2,199 | Micro Four Thirds, 20.4MP | explore.omsystem.com | Issue 254 |
| | ★★★★★ | Packed with bleeding-edge computational photography tech, image stabilisation that blows the competition out of the water and ISO performance that promises parity with full-frame sensors. | | | |
|  | OM System OM-5 | £1,199/\$1,199 | Micro Four Thirds, 20.4MP | explore.omsystem.com | Issue 263 |
| | ★★★★★ | Turns clever computational technology into easy-to-use tools, liberating you from tripods and filters. It's an all-in-one tool that will enable you to make the most of your outdoor pursuits. | | | |
|  | Panasonic Lumix G9 II | £1,699/\$1,899 | Micro Four Thirds, 25.2MP | www.panasonic.com | Issue 275 |
| | ★★★★★ | Delivers a true hybrid camera experience, with comprehensive specs that cater to both photographers and videographers. Video performance in particular is outstanding. | | | |
|  | Panasonic Lumix G100 | £599/\$748 | Micro Four Thirds, 20.3MP | www.panasonic.com | bit.ly/dc843 |
| | ★★★★☆ | Vloggers and creatives more broadly will enjoy the simplicity of the Lumix G100. With a decent viewfinder and 'proper camera' ergonomics, the G100 has an edge in a competitive market. | | | |
|  | Panasonic Lumix GX9 | £879/\$998 | Micro Four Thirds, 20.3MP | www.panasonic.com | Issue 202 |
| | ★★★★★ | On point for specs, size and price but it relies heavily on its menus and touch-screen interface and can feel fiddly to set up. However, its features and image quality can hardly be criticised. | | | |
|  | Panasonic Lumix GH5S | £2,199/\$2,498 | Micro Four Thirds, 10.2MP | www.panasonic.com | Issue 203 |
| | ★★★★★ | Pros will love its 10-bit 4:2:2 recording and high bit rates. There's no in-body-stabilisation, though, and the 10MP resolution is just too low for the GH5S to be a convincing stills camera. | | | |
|  | Panasonic Lumix GH6 | £1,999/\$2,198 | Micro Four Thirds, 25.2MP | www.panasonic.com | Issue 254 |
| | ★★★★★ | Some may feel that having an MFT sensor and contrast autofocus is outdated, but the GH6 holds its own with cameras almost twice its price in terms of functionality and image quality. | | | |
|  | Panasonic Lumix S1 | £2,199/\$2,498 | Full-frame, 24.2MP | www.panasonic.com | Issue 218 |
| | ★★★★★ | The Lumix S1 is a hefty camera that offers excellent performance. It matches both the Nikon Z 6 and Sony A7 III for image quality, but costs more than either of them. | | | |

Wise buys Macro lenses

Good, better and best... three options for life-size captures



Nikkor 40mm f/2.8 G AF-S DX Micro

Price: £269/\$277
Verdict: Typical of compact, low-cost, APS-C format macro lenses. The short focal length means having to shoot close to your subject and the lens is not particularly refined.



Sigma 105mm f/2.8 Macro EX DG OS HSM

Price: £359/\$569
Verdict: This optic offers terrific image quality and value for money for more discerning close-up shooters. It's quite big and heavy, but its 105mm focal length gives you a better shooting distance.



Tamron SP 90mm f/2.8 Di VC USD Macro

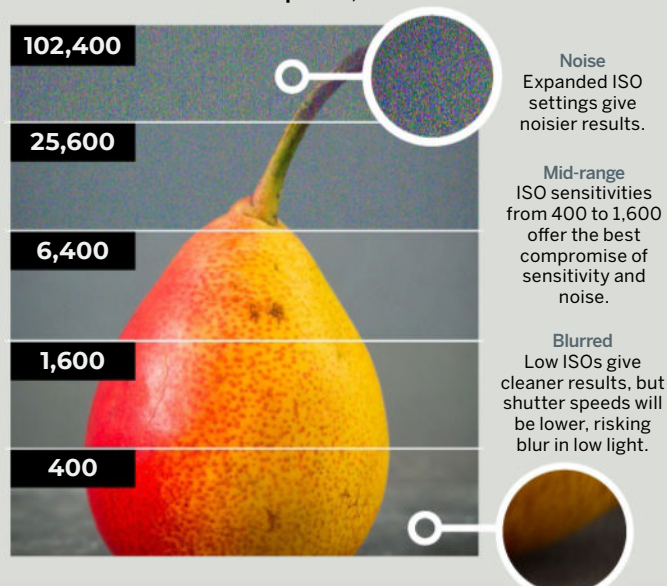
Price: £649/\$649
Verdict: The latest version of a legendary Tamron macro lens is more expensive but you get superb image quality, design and construction, plus it has built-in stabilisation.

Camera tech: ISO and image quality

Setting sensor sensitivity can be a compromise: increase the risk of blurred photos, or increase noise?

When you push the ISO higher on a camera, colours become muddier, and dynamic range (the amount of detail captured from shadows to highlights) drops off. But the most obvious side effect is an increase in the 'noise' – this is the digital equivalent of film grain but even less palatable, with the image covered in ugly coloured speckles.

ISOs in the region of 100 to 400 produce cleaner, richer and more detailed images; however, they require more light to make an exposure. This can be achieved by shooting with either a larger aperture or a slower shutter speed – or both. You can take a picture at low ISOs without making these adjustments, but it will take longer to make the exposure and that could result in a blurred picture if the subject or the camera move during this time.



Camera buyer's guide

Wise buys
Photo backpacks

Good, better and best... three bags for use in the field



Manfrotto Pro Light 3N1-36 PL

Price: £119/\$223

Verdict: A clever design makes this backpack equally adept at storing camera kit, video gear or a drone. It can also take a 15-inch laptop.



Lowepro ProTactic BP 350 AW II

Price: £149/\$162

Verdict: Fairly slimline, it's nevertheless super-tough and can squeeze a lot in. The waist strap doubles as a utility belt.



Tenba Axis 24L

Price: £199/\$229

Verdict: The range's mid-sized option, the Axis 24L can stow one or two cameras with as many as eight lenses, plus a 17-inch laptop and accessories.

MIRRORLESS (CONTINUED)

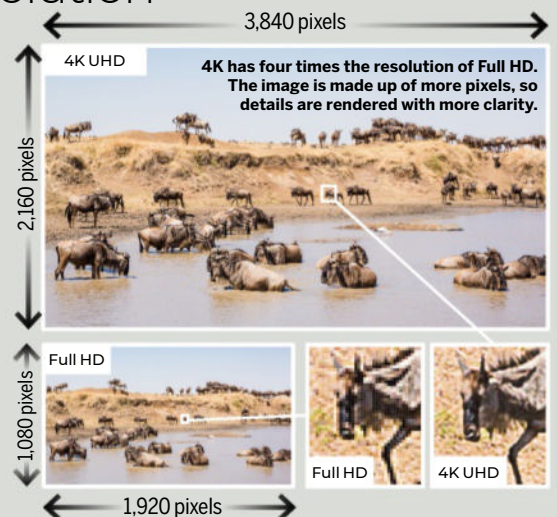
| | PRODUCT | PRICE WHEN TESTED | SENSOR SIZE/RESOLUTION | CONTACT | REVIEWED |
|--|------------------------|---|------------------------|-------------------|--------------|
| | Panasonic Lumix S1H | £3,599/\$3,999 | Full-frame, 24.2MP | www.panasonic.com | Issue 232 |
| | ★★★★★ | An interesting 'bridge' between system cameras and higher-end cine gear, but while it has the power for pro video productions, vloggers won't embrace its size, weight and patchy video AF. | | | |
| | Panasonic Lumix S1R | £3,399/\$4,199 | Full-frame, 47.3MP | www.panasonic.com | Issue 216 |
| | ★★★★★ | The Lumix S1R is big, hefty and solid and feels like it means business. It handles well and produces truly excellent image quality – and offers 60p 4K video, too. | | | |
| | Panasonic Lumix S5 | £1,799/\$1,999 | Full-frame, 24.2MP | www.panasonic.com | Issue 235 |
| | ★★★★★ | Shares the impressive 24MP CMOS sensor housed in the S1, but with improved AF. It also delivers up to 6.5 stops of stabilisation with compatible lenses. As a result, it's tough to beat. | | | |
| | Panasonic Lumix S5 II | £1,999/\$1,997 | Full-frame, 24.2MP | www.panasonic.com | Issue 267 |
| | ★★★★★ | Can capture rich stills at up to 30fps in E-Shutter mode and offers unbeatable stabilisation. The S5 II's phase hybrid AF system matches or in some cases beats cameras above its price range. | | | |
| | Panasonic Lumix S5 IIX | £2,299/\$2,198 | Full-frame, 24.2MP | www.panasonic.com | Issue 272 |
| | ★★★★★ | Extra features over the S5 II, such as SSD recording, HDMI RAW output, ALL-I compression, Apple ProRes, and Streaming functionality, make the S5 IIX an enticing proposition. | | | |
| | Sigma fp | £1,999/\$1,899 | Full-frame, 24.6MP | sigmauk.com | Issue 226 |
| | ★★★★★ | The Sigma fp is a fascinating video camera that takes a genuinely fresh approach but, unfortunately, it feels no more than an interesting alternative in the stills market. | | | |
| | Sigma fp L | £1,999/\$2,499 | Full-frame, 61MP | sigmauk.com | Issue 244 |
| | ★★★★★ | The tiny body brings some handling issues and while the new phase-detect AF system is great for stills, the video AF remains slow and unreliable. Remarkable performance for the price. | | | |
| | Sony Alpha 6100 | £679/\$748 | APS-C, 24MP | www.sony.co.uk | bit.ly/dc249 |
| | ★★★★★ | Brings a host of improvements over the A6000 but they don't come cheap. The A6100 is nearly twice the price of the A6000, somewhat limiting its appeal as an entry-level camera. | | | |
| | Sony Alpha 6400 | £949/\$899 | APS-C, 24MP | www.sony.co.uk | Issue 215 |
| | ★★★★★ | For bloggers and vloggers, the Sony A6400 is a dream. But for stills photographers, its high-tech image capture is poor consolation for its five-year-old design and limited external controls. | | | |
| | Sony Alpha 6600 | £1,399/\$1,399 | APS-C, 24MP | www.sony.co.uk | Issue 226 |
| | ★★★★★ | The A6600's stunning AF and image stabilisation make it suitable for demanding stills work, but its still image quality is good rather than class-leading. | | | |
| | Sony Alpha 7 II | £1,499/\$1,698 | Full-frame, 24.3MP | www.sony.co.uk | Issue 162 |
| | ★★★★★ | Offering all the benefits of a full-frame sensor without the bulk, the A7 II has superb image stabilisation and produces high-quality images. It's well worth your attention. | | | |

Camera tech: Video resolution


You get more pixels to play with when you record in 4K

Before starting to record video, the fundamental decision to make is which movie-recording size to use. This is largely determined by three functions: the image size or resolution, the frame rate (how many images are recorded each second) and the level of compression.

The choice of resolution is key, as this determines how much detail can be recorded, with 4K being offered by the majority of current cameras. There are, in fact, two 4K standards: TV-friendly 4K UHD (3,840 x 2,160 pixels) and a wider, more cinematic 4K 'DCI' (4,096 x 2,160). If you have space available on your memory card or external recorder, it pays to shoot at the highest resolution your camera allows, as you can always reduce this later. That said, shooting at a lower resolution usually allows you to shoot at a faster frame rate for slow-motion playback.



MIRRORLESS (CONTINUED)

| | PRODUCT | PRICE WHEN TESTED | SENSOR SIZE/RESOLUTION | CONTACT | REVIEWED |
|---|-------------------|--|------------------------|----------------|--------------|
|  | Sony Alpha 7 III | £1,999/\$1,999 | Full-frame, 24.2MP | www.sony.co.uk | Issue 203 |
| | ★★★★★ | A terrific all-rounder – its handling and control layout aren't perfect, but that's soon forgotten in the face of its AF and continuous shooting performance, not to mention its 4K video capabilities. | | | |
|  | Sony Alpha 7 IV | £2,399/\$2,499 | Full-frame, 33MP | www.sony.co.uk | Issue 249 |
| | ★★★★☆ | Not an 'entry level' full-frame mirrorless – it's too powerful, too complex and, yes, too expensive for that. It's more like a mini-A1 that's extremely good at everything but less than half the price. | | | |
|  | Sony Alpha 7C | £1,899/\$1,799 | Full-frame, 24.2MP | www.sony.co.uk | Issue 237 |
| | ★★★★☆ | Unambitious specifications, particularly in terms of its video capabilities, but its practical performance, including a handy vari-angle screen and excellent AF, make it an effective camera. | | | |
|  | Sony Alpha 7R III | £3,199/\$3,198 | Full-frame, 42.4MP | www.sony.co.uk | Issue 199 |
| | ★★★★☆ | Powerful and versatile but its battery performance is poor next to that of a professional DSLR. The A7R III's speed makes it supremely versatile but puts it up against tough rivals. | | | |
|  | Sony Alpha 7R IV | £3,499/\$3,499 | Full-frame, 61MP | www.sony.co.uk | Issue 223 |
| | ★★★★☆ | The Sony A7R IV raises the resolution bar for full-frame sensors, but it's a subtle, incremental improvement rather than a giant leap forward and this model faces some serious competition. | | | |
|  | Sony Alpha 7R V | £3,999/\$3,898 | Full-frame, 61MP | www.sony.co.uk | Issue 264 |
| | ★★★★☆ | While Sony pitches the A7R V as the resolution specialist, it also blurs all the video and sports boundaries. It's an amazing technological achievement but is it heading in the right direction? | | | |
|  | Sony Alpha 7S III | £3,800/\$3,498 | Full-frame, 12.1MP | www.sony.co.uk | bit.ly/dc503 |
| | ★★★★★ | Apart from a big and expensive cinema camera, this is the only body that can shoot 4K at 60p full-frame with no crop, recorded internally in 10-bit 4:2:2 with no limitations on recording time. | | | |
|  | Sony Alpha 9 II | £4,699/\$4,499 | Full-frame, 24.2MP | www.sony.co.uk | Issue 232 |
| | ★★★★★ | Blistering burst speed and AF performance are matched by its superb connectivity, which will be a game-changer for pros. The A9 II is a powerhouse performer for professional sports shooters. | | | |
|  | Sony Alpha 1 | £6,499/\$6,499 | Full-frame, 50.1MP | www.sony.co.uk | Issue 242 |
| | ★★★★☆ | A technological triumph, the A1 really can do everything. Previously, cameras might offer speed, resolution or video capability – the A1 offers all three. Its price is a major obstacle, however. | | | |
|  | Sony ZV-E1 | £2,350/\$2,199 | Full-frame, 12.1MP | www.sony.co.uk | Issue 270 |
| | ★★★★☆ | An excellent vlogging camera – small, compact and lightweight while packing in features such as an image-stabilised full-frame sensor, subject recognition and auto-tracking. | | | |
|  | Sony ZV-E10 | £679/\$699 | APS-C, 24.2MP | www.sony.co.uk | Issue 246 |
| | ★★★★☆ | A good camera for novice vloggers. It has 4K video, Sony's excellent autofocus system, a vari-angle screen and a clip-on muffler to cut wind noise. Plus, it's rather good value, too. | | | |

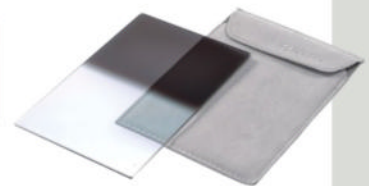
Wise buys
Graduated ND filters

Good, better and best... three options to balance exposures



Cokin Gradual ND Kit incl holder

Price: £62/\$69
Verdict: An inexpensive entry to graduated filters and designed for smaller lenses, with filter rings up to 82mm. Uses filters 84mm wide, not standard 100mm ones.



Benro Master 100x150mm Glass filters

Price: £129/\$99 each
Verdict: Made of glass to high standard and delivers minimum image degradation. Can be fitted to Benro's unique 'geared' holder.



Lee 100mm ND Grad Hard Resin filter set

Price: £185/\$283
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Sam Glenn-Smith

Jay Clue & Sam Glenn-Smith

Images by these underwater photographers are featured on PADI's latest diver certification cards. **Niall Hampton** finds out more...

As regular readers will recall in our underwater photo project with Mike Coots from issue 246, PADI is the world's leading scuba diver training organisation, running courses all over the world. A PADI certification card is given to anyone who has successfully completed its training courses, which also verifies a diver's training levels. A badge of honour in the diving community, the cards are graced with images from some of the world's leading underwater photographers. As a new batch of certification

cards has just been released, we caught up with two of the photographers that feature on them, Jay Clue and Sam Glenn-Smith.

How did you get into marine photography?

Jay: I purchased my first camera just before I moved to Baja California in Mexico six years ago. It was a small compact camera with plastic housing. Back then, I knew almost nothing about photography. I'd just run around mashing buttons in Auto mode, hoping I would get some epic shots. Eventually, a close friend sat me down and said, 'OK, you need to learn how to shoot photos or I'm



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Shawn Heinrichs

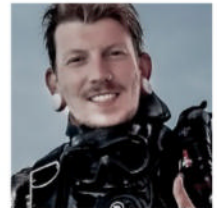
Jay Clue
Photographer and
cinemaphotographer

Clue's creative practice comprises wildlife, adventure travel, astrophotography and conservation photography. His work is driven by a passion to inspire people across the globe to take action and protect the natural beauty of the world.

As well as working as a commercial photographer, Clue also dedicates time to teaching photography workshops and leading unique ocean wildlife trips worldwide.

Clue is a PADI Master Instructor and a Tec Trimix Instructor, as well as a cave diver and Closed Circuit Rebreather Diver.

Instagram: @JayClue



Sam Glenn-Smith
Underwater photographer

Hailing from the Mornington Peninsula in Victoria, Australia, Glenn-Smith is fascinated by our marine world and loves to dive as much as he can.

A PADI instructor and dive guide, Glenn-Smith's career at The Scuba Doctor Dive Shop in Rye allows him to spend time in the water doing what he loves, giving instruction, guiding and underwater photography – a passion he shares with visitors from Australia and further afield.

Instagram: @sammyglenn_dives

Jay Clue

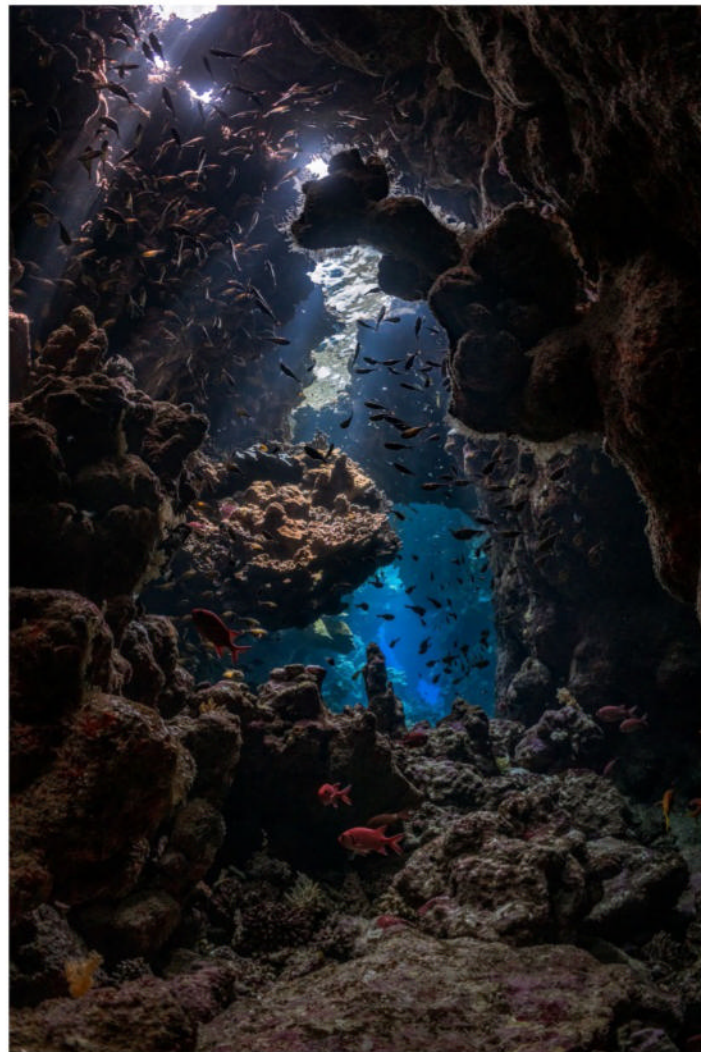


This page:

A couple holds hands in awe as a curious Oceanic Manta Ray glides in for a closer look in the Revillagigedo Archipelago.



Jay Clue



Above: A mischievous California Sea Lion pup investigates its reflection on the glass dome of Jay's camera.

Above right: Using natural light to capture hidden beauty within the coral caverns of the Red Sea.

taking the camera away'. She's an incredible photographer and I'll forever be grateful that she took the time to teach me the basics of shooting in Manual mode. Being a big nerd at heart, I began going down rabbit holes online, reading guides and watching tutorials, then going out and practising what I'd learned. I was still horrible at it but I really wanted to be able to capture photos that showed the same beauty I felt when I was in the ocean, so I kept pushing on and practising more and more.

Fast forward a year or so and I decided to save up my pennies to upgrade from my compact to a crop-sensor mirrorless camera. To my surprise, around six months or so later, I won my first photography award. Not long after that, I placed fourth in the world for the best up-and-coming photographer, as well as picking up a few other placements and awards that year.

But then, I had a change of heart and stopped entering competitions. I realised something incredibly important: beautiful images and stories can do a lot more than just be pretty. They have this incredible power to make humans who have never been to

the ocean before fall in love with it and maybe even want to protect it. This realisation became ingrained in my work as I continued learning and growing as a photographer. For me, it really changed the quality of my shots. I no longer only wanted to just capture the beauty I saw in the ocean but instead use my photos to inspire others to hopefully feel that same passion I have for our oceans. Bringing a purpose to my photography helped me take it to new levels.

Sam: I was influenced by two incredible men who continue to inspire me to this day. Alan Wiggs, who was my high school teacher and taught me to dive, and Daniel Geary (also known as Doctor Frogfish), who first put a camera in my hand and inspired the creative side in me to start shooting underwater.

Where is your favourite place to dive?

Jay: There are so many mind-blowing places to explore and beautiful encounters to have, I'm not sure I can pick just one. Cabo San Lucas always holds a special place in my heart, because it's where I started as a photographer. There's just so much opportunity in Baja California, whether it's the mobula rays, sea lion pups, whales, marlin or sharks. It's almost endless. I also love Dominica's sperm whales, the Revillagigedo Islands' mantas, Bimini's Great Hammerheads and the Philippines' coral or macro life... I could go on. Polar bears and penguins are

“Images have this incredible power to make humans fall in love with the ocean and want to protect it



Jay Clue

currently at the top of my underwater photography bucket list, though. Fingers crossed, I'll get to experience one of them soon.

Sam: I love diving, both domestically and abroad, so it's hard to narrow it down to just one specific place. Domestically, I love diving in my own backyard on the Mornington Peninsula [Victoria, Australia], due to the incredible biodiversity accessible by pier and shore dives – Portsea Pier, in particular, is incredible on the right day. The Philippines will always hold a special place in my heart as it's where so many of my diving adventures have started. It's an especially incredible part of the world for macro diving, of which I'm a huge fan, and I can't wait to get back there.

Where was the photo on your certification card taken (top right), and what is the story behind it?

Jay: In October 2023, I was working on a brand shoot for PADI at the gorgeous Wakaya Island Resort in Fiji. One of the coolest things about this project was that we had Luke Gordon, the leader of Manta Project Fiji, along with us. Learning about the incredible manta research and conservation work that his team have been conducting in the area, while also getting to photograph these beautiful creatures, was amazing. For someone like myself, coming from a background of designing platforms to bridge marine science and conservation with tourism, it was special.

The manta in the photo is Bula Blue (M467). She has only been spotted four times and only at Wakaya. Her first sighting was in June 2023, only a few months before she came to visit us. Even more special, our team got to name her. She's a juvenile and curious – spending almost the entire dive interacting with us. The diver in the background is Julie Andersen, founder of Shark Angels and global director of brand and PR at PADI. Julie's work in shark conservation is inspiring, to say the least. So being able to capture this shot of a curious young manta with a passionate conservationist alongside a talented marine scientist at a photoshoot for PADI is everything you could ever want in one package. If there was ever a perfect moment that summed up PADI's 'Seek Adventure, Save The Ocean' tagline, this was it.

Sam: The photo on my card was taken at Flinders Pier, in Victoria, Australia. Flinders is one of two dive sites where we regularly see the incredible Weedy Seadragons, and is an incredibly popular dive site. Over the summer months, the male seadragons hold clutches of bright pink eggs until they hatch. It is not unusual to see males with eggs hanging out together, but trying to capture an image of that proved difficult. This photo was a combination of patience and luck – finally managing to capture something so incredible as two dragons swimming in unison carrying eggs. To this day, it is one of my favourite photos. →

Top: Jay's photo of a manta Bula Blue (M467) appears on the PADI certification card. Taken at Wakaya Island in Fiji.

Above: Split shot taken as an Oceanic White Tip Shark patrols the surface waters off the coast of the Bahamas.

Above left: Underwater strobes illuminating the foreground with a backlit scene to silhouette the divers has created an ethereal reefscape.



Sam Glenn-Smith

Above: A male Weedy Seadragon with a fresh batch of eggs rises above the kelp beds to meet the morning sun. Photographed at Portsea Pier, Victoria, Australia. An image of a pair of Weedy Seadragons appeared on Jay's certification card.

What are your proudest achievements to date?

Jay: The first that comes to mind is finding my true passion and somehow turning it into a career. I love that I can use my skill set to work with brands and magazines, not only to inspire more people to fall in love with the ocean but also to push companies to think more sustainably and bring research and conservation groups to the table. It has allowed me to merge my love of nature with my passion for conservation and photography.

Sam: I love the fact that I can share so much of our incredible marine world with individuals who cannot or have not ever dived. To see the reactions of people who never knew such incredible creatures existed always puts a smile on my face because, ultimately, it gives them a reason to care and think about the ocean. It's incredibly hard to be passionate about something you don't know or don't understand, so being able to share images with non-divers is always a thrill. Photographically, any recognition of my images from large, well-known bodies such as PADI also fills me with pride. It's a tangible way for me to know my images are well received by divers and photographers and motivates me to get that next great shot.

What camera setup would you recommend for anyone looking to start underwater photography?

Jay: I love Sony Alpha full-frame mirrorless cameras. I shoot a Sony A1 in a Nauticam housing for my underwater work. For wide-angle, I like Nauticam's WACP-1 (wide-angle conversion port) with Sony's FE 28-60mm F4-5.6 lens. The optics on the WACP are incredibly sharp underwater and convert the Sony lens to a 130°-degree field of view. When I'm not shooting with the WACP, I'll use a Sony FE 16-35mm F2.8 G Master or Sigma's 15mm f/2.8 Fisheye.

Sam: With the huge amount of cameras on the market and the incredible innovations and technologies these days, having the biggest or most expensive underwater camera setup doesn't always equate to producing the best photos. We live in such exciting times that so many different cameras exist from compact to mirrorless to full-frame that almost everyone can get into the water and start shooting. I'd recommend people start their underwater journey with a compact. Most underwater photo competitions these days have a compact category and the shots winning these competitions are absolutely incredible.

The key to getting the best shots on any camera system is knowing and understanding what it can and can't do. A lot of users of the OM System Tough series, for example, buy a new camera and set it up according to guides they find online. These help you get the most out of your camera but a lot of users will blindly follow the guide without understanding what's going on. Setting a compact camera to Aperture Priority mode, but not understanding how aperture

“We live in such exciting times in camera tech that almost anyone can get in the water and start shooting



Sam Glenn-Smith

and ISO affect the amount of light coming into the camera, makes for some frustrating dives, particularly when using it with an underwater flash.

If you are going to follow a guide to set up your underwater camera for the first time, make sure you take the time to learn and understand how these changes affect the images being produced – it will save a lot of frustration and, ultimately, allow you to get some incredible shots with your camera.

I love shooting with mirrorless cameras for their incredible range of lenses and quality of images, but for a newcomer getting into underwater photography, compact cameras are a great introduction. Do your research and work out which camera suits the style of photography you're interested in before buying one.

Can beginners start off by using built-in flash underwater, or is special lighting required?

Jay: You don't want to use a built-in flash underwater because the light illuminates the water between you and the subject, which can create a lot of backscatter. Essentially, the light bounces off particles in the water and reflects back to the camera as white dots, making your shots look like they were taken in a snowstorm. Internal strobes aren't powerful enough to cut through water and properly illuminate the subject. Instead, it's better to use external strobes, such as Sea & Sea Imaging's YS-D3 Mk II Lightning strobes, or video lights, such as Keldan's 8XR lights. By mounting the lights on arms attached to the camera housing, we can space them out so the outer edge of the beam is just touching the subject and doesn't illuminate the water between your subject and the camera.



Sam Glenn-Smith

The other benefit of external strobes is that you can control the shadows and highlights they create by moving them to different spots. For example, to create hard shadows, I move both strobes to one side of the housing to cast harder shadows on the subject.

Sam: A lot of people think that buying the best camera and housing for their budget will produce the best photos when artificial lighting is just as important – if not more so – than the

Top: A Harlequin Shrimp (*Hymenocera picta*) sits atop an orange sea star in Tulamben, Bali.

Above: A Southern Blue Ringed Octopus under Rye Pier, Victoria, Australia.



Left: A stunning *Austraolis ornata* dances upon an orange sponge near Rye Pier, Australia.

camera itself. Having a video light or strobes will improve your images, enhancing colours and contrast and making your subject stand out from backgrounds.

Investing in a good set of strobes is as important as choosing the right camera. In fact, buying a more cost-effective camera, such as a compact, and two good quality underwater strobes will produce better photos than a more expensive camera with no artificial light. Most strobes on the market are cross-compatible with almost any camera and can be used across various camera ranges – for instance, starting on a compact camera and upgrading to a mirrorless camera and housing most strobes will have cross-compatibility. Research the market and pick the best strobes you can that will be a good tool to learn with, but will also be future-proofed if you decide to upgrade to a more advanced camera system.

Which settings are best to use underwater, the semi-automatic modes or full manual?

Jay: Full manual is the way to go in most situations, as it gives you control over your shots. Light works differently underwater than on land and cameras tend to try to overcompensate when running in Auto. You'll want to dial in custom white balance underwater, as water absorbs the visible spectrum of

light quickly. For example, at six metres, you've already lost the entire red spectrum of visible light.

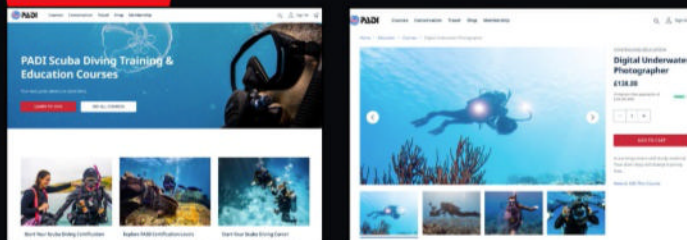
Sam: For underwater photography, more control is better – especially when working with artificial lighting. I recommend learning full manual control (or as close to full manual that your camera allows – Aperture Priority on a compact, for instance). While there is a near-infinite combination of settings to produce a variety of images, with underwater photography, the ISO typically remains low (100-400) and shutter speed remains fast (1/125 to 1/250 sec). Shutter speed is one of the least varied settings used in underwater photography: if it is too slow, you will get motion blur, but most strobes (artificial flash) will sync at 1/250 or 1/320 sec if you are using sync cables. Underwater photographers are heavily reliant on aperture to control both the amount of light coming through the lens, as well as the depth of field – both are vital in underwater photography.

Auto exposure modes, including underwater mode, can be used if all else fails, but you will always get better results shooting in a variation of manual. ●

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| 90D body box | £849 |
| 80D body | £499 |
| 760D body | £599 |
| 650D body | £299 |
| BG-E20/16/14/13/11/9/8 grip ea | £99 |

CANON M MIRRORLESS USED

| | |
|-----------------------------|------|
| M3 + 15-45 F3.5/6.3 IS STM | £199 |
| EF-M 11-22 F4.5/6 IS STM | £299 |
| EF-M 15-45 F3.5/6.3 IS STM | £79 |
| EF-M 18-150 F3.5/6.3 IS STM | £329 |
| EF-M 55-200 F4.5/6.3 IS STM | £199 |
| EF-M adapter | £89 |

Used Canon

200-400mm IS USM £4999
300mm F2.8 IS USM LII £2999
400mm F4 DO II USM £3499
500mm F5.6 IS USM LII USM £5499

CANON AF LENSES USED

| | |
|--------------------------------|-------|
| 8-15 F4 L USM | £749 |
| 10-18 F4.5/5.6 IS STM EFS | £149 |
| 10-22 F3.5/4.5 USM EFS | £149 |
| 24 F4 L USM box | £1399 |
| 14 F2.8 USM LII | £799 |
| 15-85 F3.5/5.6 EFS | £199 |
| 16-35 F2.8 USM LII | £899 |
| 16-35 F4 USM IS L box | £499 |
| 17 F4 TSE box | £1199 |
| 17-40 F4 L USM | £299 |
| 17-55 F2.8 IS USM box EFS | £399 |
| 18-55 F3.5/5.6 IS STM EFS | £99 |
| 18-135 F3.5/5.6 IS EFS | £149 |
| 18-200 F3.5/5.6 IS EFS | £299 |
| 24 F3.5 TSE II box | £1399 |
| 24 F3.5 TSE | £699 |
| 24-70 F2.8 USM LII box | £899 |
| 24-70 F4 IS USM L | £599 |
| 24-105 F4 IS USM LII | £799 |
| 24-105 F4 IS USM L | £499 |
| 28-135 F3.5/5.6 IS USM | £199 |
| 35 F1.4 USM LII box | £1199 |
| 40 F2.8 STM | £149 |
| 50 F1.2 L USM box | £149 |
| 50 F1.8 STM box | £249 |
| 50 F1.8 USM | £149 |
| 55-250 F4.5/6.3 IS EFS | £149 |
| 60 F2.8 macro box | £149 |
| 70-200 F2.8 IS USM LII | £899 |
| 70-300 F4.5/6.3 IS USM II Nano | £499 |
| 70-300 F4.5/6.3 IS USM | £249 |
| 75-300 F4.5/6.3 | £149 |
| 85 F1.2 USM LII box | £799 |
| 85 F1.8 USM | £299 |
| 100 F2.8 IS USM L macro box | £699 |
| 100 F2.8 USM macro box | £299 |
| 100-400 F4.5/5.6 LII box | £1499 |

Used Canon

5D MKIV body box £1299
90D body box £849
7D MKII body box £599

| | |
|--------------------------|-------|
| 135 F2.1 USM | £499 |
| 180 F3.5 L USM macro box | £699 |
| 200-400 F4 IS USM | £499 |
| 300 F2.8 IS USM LII | £2999 |
| 400 F2.8 L IS USM II | £4999 |
| 400 F4 DO II IS USM | £2499 |
| 400 F5.6 L USM box | £699 |
| 500 F4 IS USM LII | £5499 |
| 1.4x extender MKIII | £249 |
| 2x extender MKIII | £249 |
| 25mm ext tube II | £129 |

SIGMA CAF USED

| | |
|------------------------|------|
| 10 F2.8 EX DC HSM | £199 |
| 10-20 F3.5 EX DC HSM | £199 |
| 10-20 F4/5.6 DC HSM | £399 |
| 12-24 F4/5.6 II DG | £999 |
| 20 F1.4 DG Art box | £499 |
| 24-105 F4 DG OS box | £499 |
| 50 F1.4 DG HSM Art box | £499 |

70-300 F4.5/5.6 DG £1399
100-400 F5.6/3 DG OS box £499
105 F2.8 EX DG HSM OS box £299
120-300 F2.8 DG OS HSM Sport £1799
150-600 F5.6/3 DG OS sport £749
150-600 F5.6/3 DG OS contem £749
TC1401 1.4x extender £169

OTHER CAF USED

| | |
|--------------------------|------|
| TAM 16-30 F3.5/6.3 II VC | £399 |
| TAM 24-70 F2.8 USD VC | £299 |
| TAM 70-300 F4/5.6 D L | £999 |

FLASH/ACCESSORIES USED

| | |
|-----------------------|------|
| ST-E3 transmitter box | £169 |
| 430EXIII | £199 |
| 430EX II | £99 |
| 580EX II | £99 |
| 600EX RT | £199 |
| angle finder C | £79 |
| TC-80N3 remote | £79 |

Used Nikon

Z9 body box £3799
Z8 body box £3199
Z7 MKII body box £1999
Z7 body box £1299

NIKON Z MIRRORLESS USED

| | |
|------------------------------|-------|
| Z9 body box | £3799 |
| Z8 body box | £3199 |
| Z7 MKII body box | £1999 |
| Z7 body box | £1299 |
| Z6 MKII body box | £1299 |
| ZFC + 16-50 F3.5/6.3 S VR DX | £799 |
| 14-24 F2.8 S box | £1699 |
| 16-50 F3.5/6.3 S VR DX | £249 |
| 24-70 F2.8 S box | £1699 |
| 24-70 F4 S box | £399 |
| 35 F1.8 S box | £599 |
| 50 F1.2 S box | £1699 |
| 50 F1.8 S | £449 |
| 50-250 F4.5/6.3 S DX | £199 |
| 70-200 F2.8 VR S box | £1699 |
| 85 F1.8 Z box | £599 |
| 100-400 F4.5/5.6 VR S box | £1999 |
| 105 F2.8 VR macro box | £799 |
| 400 F4.5 VR S Mint box | £2499 |
| FTZ adapter II box | £229 |
| FTZ adapter box | £179 |

NIKON DSLR USED

| | |
|----------------------------|------------|
| D5 body | £2499 |
| D4 body | £699 |
| D810 body box | £1299/1999 |
| D850 body box | £499/799 |
| D800 body box | £499 |
| D780 body Mint box | £1599 |
| D750 body box | £599 |
| D700 body | £199 |
| D610 body box | £399 |
| D500 body box | £1199 |
| D7500 body box | £899 |
| D7200 body box | £599 |
| D7100 body box | £449 |
| D7000 body | £199 |
| D300 / D90 / D80 body each | £149 |
| MBD-18 (D850) | £249 |
| MBD-17 (D500) | £99 |
| MBD-16 (D750) | £69 |
| MBD-15 (D7000/7100/7200) | £99 |
| MBD-12 (D800/810) | £99 |
| MBD-80 (D80/90) | £49 |

Used Nikon

400mm F2.8 E FL AFS VR £4499
500mm F4 E FL ED VR £3999
500mm F5.6 PF AFS VR £2299

NIKON AF LENSES USED

| | |
|--------------------------------|-------|
| 10.5 F2.8 fisheye box | £199 |
| 10-20 F4.5/5.6 AF-P DX VR | £199 |
| 10-24 F3.5/4.5 AFS box | £399 |
| 14-24 F2.8 AFS | £699 |
| 16 F2.8 AFD fisheye | £299 |
| 16-35 F4 AFS VR box | £399 |
| 16-80 F2.8 VR DX | £599 |
| 16-85 F3.5/5.6 AFS VR | £1199 |
| 17-50 F2.8 AFS | £299 |
| 18-35 F3.5/4.5 AFS box | £399 |
| 18-200 F3.5/5.6 VR DX MKII | £149 |
| 18-200 F3.5/5.6 VR DX | £299 |
| 18-200 F3.5/5.6 VR DX | £599 |
| 20 F2.8 AFD box | £199 |
| 24 F1.4 G AFS Mint box | £699 |
| 24 F2.8 AFD box | £249 |
| 24-70 F2.8 AFS VR box | £1399 |
| 24-70 F2.8 AFS | £349 |
| 24-120 F4 AFS VR | £499 |
| 28-300 F3.5/5.6 VR box | £599 |
| 35 F1.4 AFS box | £799 |
| 35 F1.8 AFS G DX | £299 |
| 35 F1.8 AFS ED | £299 |
| 35 F2.8 AFD | £299 |
| 50 F1.4 AFS G box | £249 |
| 50 F1.8 AFS box | £99 |
| 50 F1.8 AFD | £299 |
| 55-200 F4.5/5.6 AFS VR box | £149 |
| 60 F2.8 AFS | £299 |
| 70-200 F2.8 E FL AFS box | £1399 |
| 70-200 F2.8 AFS VR box | £599 |
| 70-300 F4.5/5.6 E AF P VR | £499 |
| 70-300 F4.5/5.6 AFS VR box | £299 |
| 70-300 F4.5/5.6 AFD | £699 |
| 80-400 F4.5/5.6 AFS VR box | £699 |
| 85 F1.4 G AFS box | £499 |
| 85 F1.8 AFS box | £299 |
| 105 F2.8 AFS VR macro | £399 |
| 200-500 F4.5/6.3 ED AFS VR box | £999 |

Used Nikon

D5 body £2499
D850 body box £1299/1999
D500 body box £1199

NIKON AF LENSES USED

| | |
|--------------------------|-------|
| 300 F2.8 AFS VR II | £1999 |
| 300 F4 E PF ED VR box | £799 |
| 400 F2.8 E FL AFS VR | £499 |
| 500 F4 E FL AFS VR | £2999 |
| 500 F5.6 E PF VR AFS box | £2399 |
| TC14-EIII box | £299 |
| TC14-EII box | £99 |
| TC17-EIII box | £99 |
| TC20-EIII box | £199 |

SIGMA NA USED

| | |
|------------------------------|-------|
| 10-20 F3.5 DC box | £199 |
| 10-20 F4/5.6 DC HSM | £99 |
| 12-24 F4.5/5.6 II HSM | £399 |
| 18-300 F3.5/6.3 OS HSM | £1299 |
| 24-105 F4 DG OS | £499 |
| 35 F1.4 DG Art | £499 |
| 50 F1.4 DG HSM Art | £499 |
| 70-200 F2.8 EX DG OS HSM | £499 |
| 85 F1.4 Art box | £799 |
| 105 F2.8 EX DG HSM OS | £299 |
| 120-300 F2.8 DG OS HSM Sport | £1799 |
| 150 F2.8 EX DG OS HSM box | £599 |

150-600 F5.6/3 DG OS sport £749
150-600 F5.6/3 DG OS contem £749
180 F2.8 DG OS macro box £599
300-800 F5.6 EX DG HSM £2499
500 F4 DG OS HSM Sport box £2499
TC1401 extender £169

OTHER NA USED

| | |
|---------------------------|-------|
| TAM 15-30 F2.8 DH USD | £299 |
| TAM 16-300 F3.5/6.3 II VC | £1399 |
| TAM 18-250 F3.5/6.3 DI II | £399 |
| TAM 90 F2.8 macro | £199 |
| TAM 150-600 F5.6/3 DI VC | £499 |

FLASH / ACCESSORIES USED

| | |
|--------------------------------|------|
| SB-R1 ring flash box | £499 |
| SB-700 | £149 |
| SB-910 | £199 |
| SB-800 commander | £199 |
| DR-6 or DR-5 angle finder each | £149 |
| DR-4 angle finder | £79 |
| MC-36A remote | £99 |
| MC-30A remote | £59 |
| 5C-19 / 5C-28 cable each | £49 |

35mm AUTO/MANUAL FOCUS CAMERAS & ACCESSORIES, CANON, MINOLTA, NIKON, OLYMPUS, PENTAX, ETC. USED

BILLINGHAM BAGS USED

| | |
|---------------|------|
| 225 Khaki/Tan | £229 |
| 335 Khaki/Tan | £269 |
| 335 Black/Tan | £269 |
| 555 Khaki/Tan | £369 |
| 555 Black/Tan | £369 |

GITZO CF TRIPODS/HEADS USED

| | |
|---------------------------|------|
| GT3541LS | £499 |
| GT3542 | £499 |
| GT5525 | £499 |
| GT5540LS | £499 |
| GH3750QR head | £299 |
| GH3780QD head | £299 |
| GH53805QR head | £299 |
| GS3750 DQR panoramic head | £149 |

FUJI X DIGITAL USED

| | |
|-----------------------|------|
| X-T1 body | £399 |
| X-T100 body | £299 |
| VG-XT4 grip | £199 |
| VPB-XH1 grip | £99 |
| 10-24 F4 XR R box | £399 |
| 16 F1.4 WR box | £499 |
| 16-80 F4 WR | £499 |
| 18-55 F2.8/4 XF Mint | £399 |
| 20 F1.4 XF | £399 |
| 50-120 F4.5/5.7 MKII | £299 |
| 55-200 F3.5/4.8 R box | £399 |
| 56 F1.2 R box | £499 |
| 60 F2.4 R mac | £299 |
| X500 flash | £299 |
| EF-42 flash | £99 |

OLYMPUS MICRO 4/3 USED

| | |
|-----------------------|-------|
| OM-1 body Mint box | £1399 |
| EM1 MKII body box | £599 |
| EM10 MKII body | £399 |
| EM10 MKII body | £299 |
| 8 F1.8 Pro | £499 |
| 9-18 F4.5 ED | £299 |
| 12-40 F2.8 | £399 |
| 12-45 F4 Pro box | £399 |
| 12-50 F3.5/5.6 | £149 |
| 40-150 F2.8 Pro | £749 |
| 40-150 F4 Pro | £599 |
| 40-150 F4.5/5.6 | £149 |
| 60 F2.8 mac | £369 |
| 75-300 F4.8/6.7 MSCII | £149 |

PANASONIC MICRO 4/3 USED

| | |
|----------------------|------|
| G9 body | £499 |
| G7 body | £299 |
| GH5 body box | £599 |
| GH4 body box | £499 |
| GX80 body box | £299 |
| 8 F3.5 box | £499 |
| 12-60 F3.5/5.6 | £299 |
| 14-42 F3.5/5.6 | £299 |
| 14-45 F4.5/6 | £149 |
| 25 F1.7 | £119 |
| 42.5 F1.2 DG | £499 |
| 45-175 F4.5/5.6 | £299 |
| 100-200 F4.5/5.6 | £149 |
| 45-200 F4.5/5.6 MKII | £349 |

PANASONIC S DIGITAL USED

| | |
|---------------------------|------|
| Lumix S5 + 20-60 F3.5/5.6 | £899 |
|---------------------------|------|

PENTAX DIGITAL USED

| | |
|--------------------------|------|
| K5 II body box | £299 |
| 16-45 F4 ED DA box | £149 |
| 18-55 F3.5/5.6 AL | £49 |
| 55-300 F4.5/6.3 ED HD WR | £299 |

SONY DIGITAL USED

| | |
|------------------|-------|
| A1 body box | £4499 |
| A9 MKII body box | £1999 |
| A9 body box | £1499 |
| A7R MKV body box | £3399 |
| A7R MKIV box | £1999 |
| RX10 MKIV box | £1199 |

SONY FE MOUNT DIGITAL USED

| | |
|----------------------------|-------|
| 12-24 F2.8 M box | £1999 |
| 16-35 F4 ZA box | £599 |
| 24 F1.4 G box | £899 |
| 24-70 F2.8 GM II box | £1699 |
| 24-70 F4 ZA OSS box | £399 |
| 24-105 F4 G OSS box | £599 |
| 35 F1.4 ZA OSS box | £599 |
| 35 F2.8 box | £299 |
| 50 F1.2 box | £1499 |
| 55 F1.8 box | £399 |
| 70-200 F2.8 GMII box | £1999 |
| 70-300 F2.8 GM OSS | £899 |
| 100-400 F4.5/5.6 OSS D box | £1499 |
| 200-600 F5.6/6.3 box | £1399 |

BRONICA, FUJI, HASSELBLAD, MAMIYA, PENTAX ETC. MEDIUM FORMAT USED

BRONICA ETR 645 USED

| | |
|-----------------------------|------|
| ETRS1 + AEIII prism + 75 EI | £699 |
| + speed grip + 120 back | £699 |
| ETRS1 body | £299 |
| ETRS body | £199 |
| 40 F4 PE | £399 |
| 40 F4 E | £199 |
| 50 F2.8 PE | £299 |
| 135 F4 | £299 |
| 150 F3.5 PE | £199 |
| 200 F4.5 E | £99 |
| 2x extender | £49 |
| ETRS1 120 back RWC late | £99 |
| AEIII prism | £399 |
| AEIII prism | £199 |
| Ext tube E14 or E28 each | £149 |
| Speed grip E | £99 |
| Prism E box | £149 |
| Prism E box | £149 |

BRONICA SQ 6x6 USED

| | |
|----------------------------|--------|
| SQAI + 80 + WLF + 1120 box | £699 |
| SQAI body | £399 |
| SQAI body | £299 |
| 40 F4 S | £399 |
| 50 F3.5 PS box | £349 |
| 110 F4 macro | £299 |
| 150 F4 PS | £199 |
| 2x converter PS | £69 |
| 2x converter S | £69 |
| SQAI waist level finder | £149 |
| SQAI prism late | £399 |
| SQAI 120 back late | £149 |
| SQAI 120 back early | £99 |
| Plain prism S | £199 |
| Polaroid back E | £20 |
| SQA speed grip | £99 |
| Lens hoods various | £20/50 |

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with Chris George

What the f-stop?

How much do you really know about photography? Test yourself to the max every issue with our tricky trivia quiz!



Getty

CBS Photo Archive/Getty

- 1 **Who is the Spider-Man actor in this promotional photo?**
 - A Tom Holland
 - B Tobey Maguire
 - C Andrew Garfield
 - D Nicholas Hammond
- 2 **Who wrote the short story The Little Photographer?**
 - A Virginia Woolfe
 - B Daphne du Maurier
 - C George Elliot
 - D Harper Lee
- 3 **What is the size of the sensor on the newly-released Fujifilm X100VI compact camera that is currently selling like hotcakes?**
 - A Full-frame
 - B MFT
 - C APS-C
 - D 1-inch (Type 1)

- 4 **What is two stops faster than f/4?**
 - A f/2
 - B f/6
 - C f/8
 - D f/16
- 5 **NASA's Handheld Universal Lunar Camera (or HULC) will be the next camera on the moon. But what terrestrial camera is this based on?**
 - A Hasselblad 907X 100C
 - B Nikon Z 9
 - C Hasselblad X2D
 - D Nikon D6
- 6 **Which David Bailey book exclusively features photographs of his then-wife, Marie Helvin?**
 - A Apples and Pears
 - B Raspberry Tart
 - C Dog and Bone
 - D Trouble and Strife

- 7 **Which cinema camera company has Nikon just bought?**
 - A Arri
 - B Blackmagic
 - C RED
 - D Z Cam
- 8 **ISO1600 is how many stops more sensitive than ISO200?**
 - A 3
 - B 8
 - C 14
 - D 1400
- 9 **What is the saying attributed to legendary American photojournalist Weegee?**
 - A f/5.6 and be there
 - B f/8 and be there
 - C f/11 and be there
 - D f/16 and be there
- 10 **Lomography has just introduced a brand new 110 camera. How many exposures do you get from a 110 film cartridge?**
 - A 12
 - B 15
 - C 24
 - D 36



Lomographische GmbH

How did you do?

10 points You're a photo mastermind!
8-9 points Fantastic, you're a brainiac
6-7 points Really good score
4-5 points Respectable, but no cigar
2-3 points We'll keep your score secret
0-1 points Epic fail

ANSWERS 1D,2B,3C,4A,5B,6D,7C,8A,9B,10C



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fps

1.S

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f/4.0-5.6 II



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