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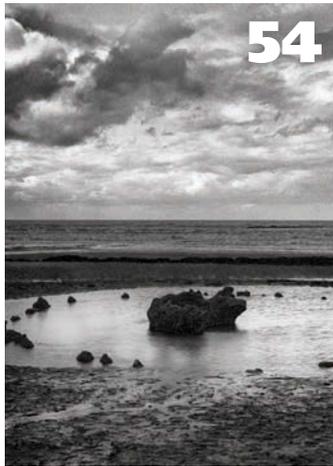
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Welcome



One of the great challenges of photography is how to convey a moving world in a static image. How

do you use the controls available to you to best convey that motion to the viewer? This issue is dedicated to the various ways that you can get creative with a wide range of moving subjects (or even suggesting movement where there was none, by moving the camera). We talk to experts in the fields of sports, aviation, wildlife and people photography and reveal the stories behind some great images. We also present our round-up of the best cameras for capturing action, should you be looking to upgrade. Don't forget to check out our latest subscription offer too, and get AP delivered to your door for less – what's not to like?

Nigel Atherton, Editor



COVER PICTURE © RHIAN WHITE

Our cover puppy was photographed by Rhian White (@rhianwhitephotography). Our pull-out cover shot is by Denise Maxwell (@lensi_photography)

THIS ISSUE'S CONTRIBUTORS



WILL CHEUNG

Expert contributor Will reveals all you need to know to make the most of your camera's burst mode



TRACY CALDER

The AP regular discovers a photographer's unique ICM methods to capture Seahenge



ANDY WESTLAKE

AP's resident expert, together with Jon Stapley, compiles the best cameras for action



IAN KNAGGS

Get creative – Ian reveals his secrets for taking successful product still-lives using high-speed flash



DENISE MAXWELL

The top photographer shares her tips and techniques for shooting athletics and other sports



KINGSLEY SINGLETON

Kingsley is one of five pros who help you avoid mistakes photographing various subjects

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FLICKR: [flickr.com/groups/amateurphotographer](https://www.flickr.com/groups/amateurphotographer)



Rotolight NEO 3 PRO and AEOS 2 PRO launch on Indiegogo

 ROTOLIGHT is using the crowdfunding platform Indiegogo for the launch of two new LED lights, the NEO 3 and AEOS 2 PRO Editions. The new products follow on from last year's successful launch of the NEO 3 and AEOS 2 on Kickstarter (the NEO 3 was named Lighting Product of the Year in AP's most recent awards). The lights come with a range of additions for pros, and are said to give up to 25% greater continuous light output than their predecessors. They also have built-in Godox, Profoto, Elinchrom, Neewer and Pixapro flash receivers, which is an industry first.

Another selling point is in the inclusion of preset packs, which include over 100 special effects designed by leading photographers and Emmy-award winning filmmakers. You can select the presets directly from within the light or via the Rotolight app, with an on-screen colour preview.

There are also new Kelvin presets in CCT (continuous light) mode, including 5600K

(daylight), 3200K tungsten and 4600K (midpoint). The lights can calculate and display the light output as an f-stop for a subject at a given distance, along with the ISO and shutter speed, eliminating the need for a light meter.

'We are very excited to launch the new campaign via Indiegogo for the AEOS 2 and NEO 3 PRO Editions,' said a Rotolight spokesperson. 'Following notable industry-specific launches from brands including Canon, Benro, Laowa and Sirui, we feel that this is the best platform for the launch... Backers will have the ability to order their PRO Edition lights in a variety of options, including multi-light kits and accessory bundles, as well as becoming the first in the world to get their hands on them.'

The Rotolight NEO 3 and AEOS 2 PRO Edition Indiegogo campaign went live on 18 October and will run until 18 November 2022. Visit www.rotolight.com/timetogopro and also see pages 24-25 in this issue.



The NEO 3 PRO and the AEOS 2 PRO lights can be ordered in a variety of bundles via Indiegogo

Ajax Amsterdam players Johan Cruyff, Dick Van Dijk and Horst Blankenburg on French soil for the round of 16 first leg of the European Cup of Champions Clubs, in 1971, Stade Vélodrome, Marseille

© André Lecoq/L'Équipe

He shoots, he scores

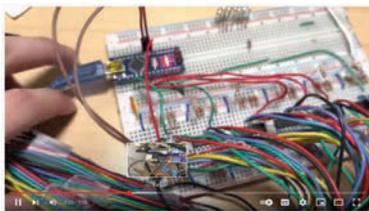
 AS FOOTBALL fans start to get excited about the forthcoming World Cup, a selection of historic World Cup and football press photos are to be auctioned on 8 November, including Maradona's 'Hand of God' photo against England. The images come from the *L'Équipe* photo collection, which brings together more than 12 million images, including over four million related to football. Featured legends include Stanley Matthews, Bobby Charlton, George Best, David Beckham, Pelé, Ronaldo and many more. See bit.ly/historicsoccerauction



So bad it's good

YOUTUBER
Electromechanical Productions has documented a fascinating, Frankenstein-esque project to create what might be the worst camera ever made.

Taking an 8x6 arrangement of photocells (light-sensitive resistors) in a grid, Electromechanical Productions has then hooked it up to an analog multiplexer, which links to an Arduino microcontroller. The creator discusses how it could be made to take more detailed colour images, either by adding more photocells, or by constructing a motor rig that could move the camera around to create a composite image, like the Pixel-Shift Multi-Shot mode on some cameras. 'But for right now,' he concludes, 'I believe we have created the very worst camera that has ever been made, ever, in human history.' See bit.ly/badcamera



A YouTuber discusses his creation

Canon honours young activists

NETRA Venkatesh and Nabilah Chowdhury have been announced as the winners of the Under 16 and Under 21 categories in the Canon Young Champion of the Year competition. Netra (Under 16s) was praised for her work founding a Dubai-based organisation dedicated to providing free education to 5,000 young women in rural, refugee and slum settings across the developing world. Nabilah was recognised for her wildlife conservation efforts and climate activism in Sydney. Also attending the ceremony for the Canon Global Good Awards was Canon Ambassador and artist Eliška Sky, who exhibited the first three studies of her photo project titled Parasites. See globalgoodawards.co.uk



From Eliška Sky's project

The new version of the M6 will be available on 3 November



Leica M6 returns

AN UPDATED version of the classic M6 35mm film rangefinder has been announced by Leica.

The 2022 version is equipped with an updated 0.72x magnification rangefinder and a battery warning indicator, while the redesigned top cover is milled from solid brass and enhanced with an abrasion-resistant lacquer (replacing the previous version's die-cast zinc). All optical surfaces in the rangefinder are now coated and less sensitive to stray light, while the light meter now shows the correct exposure via a red dot in addition to the two arrow symbols originally used. The exposure meter in the M6 measures

light via a brightened area on the mechanically controlled cloth shutter but otherwise, the 'new' camera retains a lot of original features, such as the slanted film-rewind crank and the red Leitz logo.

'Conscious analogue photography as an antithesis to the flood of digital images is enjoying great popularity,' said Leica's Stefan Daniel. 'Therefore, it was only logical for us to produce the Leica M6 again as one of the most popular representatives of this camera type.'

The Leica M6 is set to be available globally at Leica Stores, the Leica Online Store and authorised dealers from 3 November, for £4,500.

The 35mm film camera comes in two colours



Point-and-click film fun

AT THE other extreme, the LomoApparat 21, a back-to-basics film camera, has been released by analogue specialist Lomography.

The camera features a fixed 21mm wideangle lens, hence the name, and although it can be loaded with different 35mm film emulsions, there is hardly any manual control or adjustment. The lens is fixed focus, the aperture is f/10, and the shutter speed is set at 1/100sec. You do get a built-in flash,

however, which takes a range of funky coloured gels, and there is an adapter for 7.8-inch close-ups, along with others for kaleidoscope and multiple exposure effects. So it's a point-and-shoot camera aimed at a younger, fun crowd who still want to try different film stocks. The LomoApparat 21 comes in black (£89) or retro orange and blue (sorry, 'Neubau') for £99.

See shop.lomography.com and watch out for a review in AP soon.

Books

The latest and best books from the world of photography



Human Playground: Why We Play by Hannelore Vandenburg

£59.95, teNeues, hardback, 288 pages, ISBN: 9783961713776



Also available as a docuseries on Netflix, *Human Playground* sees the world through the concept of play as explored by photographer Hannelore Vandenburg. With beautiful photographs of a diverse range of worldwide games and sports, the monograph aims to deal with the central question of 'why we play'.

By taking a look at themes which span the globe, such as ancient rituals, rites of passage, business, pain, perfection and sacredness, this is a book which manages to encompass what it is to be human.

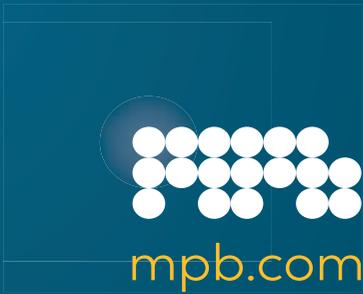
Philosophy aside, the photography is gorgeous. From the Donga stick fighters of Ethiopia to the Tarahumara runners of Mexico, to Cuba's female boxers and the Buzkashi of Central Asia, this is a beautiful book to get lost in and soak up the culture.

Portraits of Tibet by Diane Barker

£30, Bird Eye Books, hardback, 160 pages, ISBN: 9781912213559



Here we have 108 portrait images made by photographer Diane Barker during her travels to Tibet, home to one of the last great surviving nomad communities in the world. Since her first visit in 1999, Diane has returned to the region almost annually, staying with nomad families and exploring across the area. Few outsiders have had the same kind of access, so Diane's portraits – alongside her commentary – provide a unique insight. You'll see everyday activities, captured with detail and intimacy, which reveal the age-old practices retained by the Dropka communities. Diane writes that she tried to convey 'the magic, the beauty and the mystical consciousness of people in tune with spirit both inner and outer.'

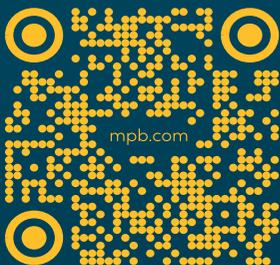


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It's good to share

Our favourite photos posted by readers on our social media channels this week

AP picture of the week

Luna . Selene . Moon by Richard Krawiec

Olympus OM-D E-M1 Mk III using an Astromania T2 adapter mounted on an old Meade ETX-90 telescope at 1250mm, 1/160sec, ISO 1000

Richard tells us, 'This photo was shot in Alicante on our solarium where the light pollution was minimal. I wanted to produce something other than the usual silvery disc, so I took one raw image to produce one dark and one light exposure then blended them in Snapseed on iPad Pro. I did some brushwork to selectively warm and cool various areas, plus a little detail sharpening was done.'

You can see more of Richard's work on Flickr: www.flickr.com/photos/blofeld09

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Party On... by Lisa Alsop

Canon EOS 90D, Canon EF-S 18-135mm f/3.5-5.6 IS USM lens at 59mm, 1/200sec at f/5, ISO 6400

'This was taken at an event at Warwick Castle. It makes me feel part of the crowd and could be at any event, jumping around to the music. I usually take sports photography, mainly of rugby, dance or cycling, so this was a bit different for me.'

Instagram: @itogger_photography



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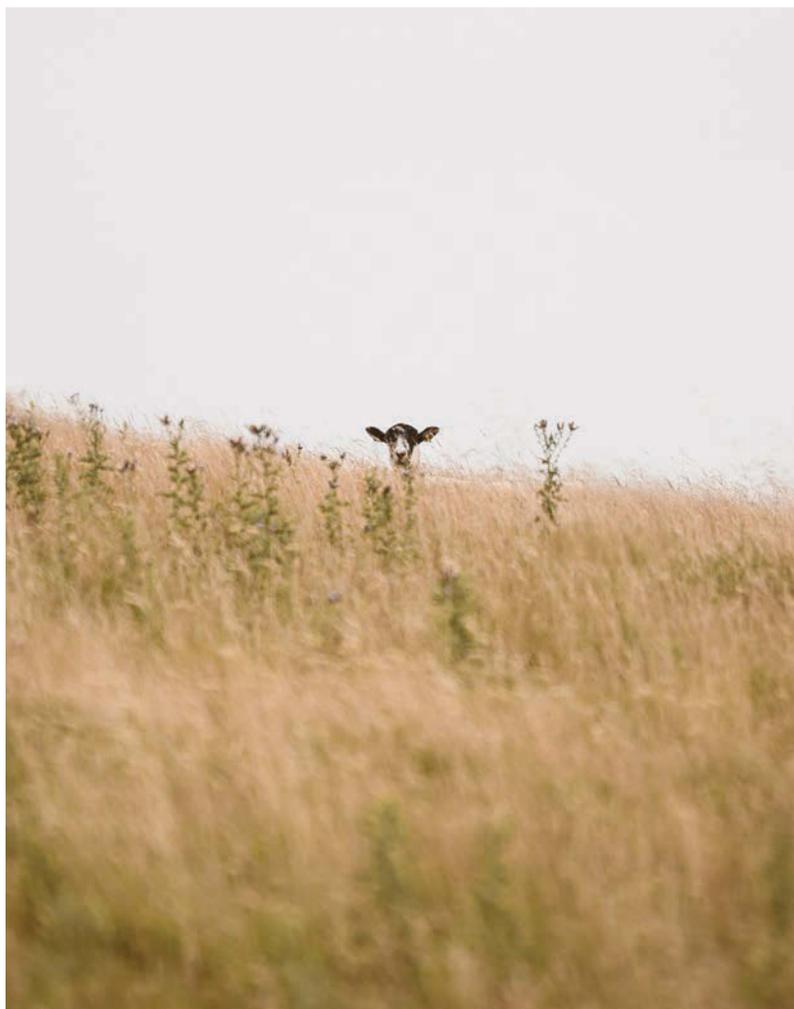
Oh, Hello! by Dan Lord

Sony Alpha 7 III, Sony 70-200mm F4 at 200mm, 1/250sec at f/4, ISO 100

'I captured this image during a recent National Trust Lyme Park visit. It was an opportunistic shot as I saw the sheep rearing their heads up and down as we walked past.

Thankfully this one kept its head raised long enough for me to lock focus and get the capture!'

Instagram: @danlordphotography



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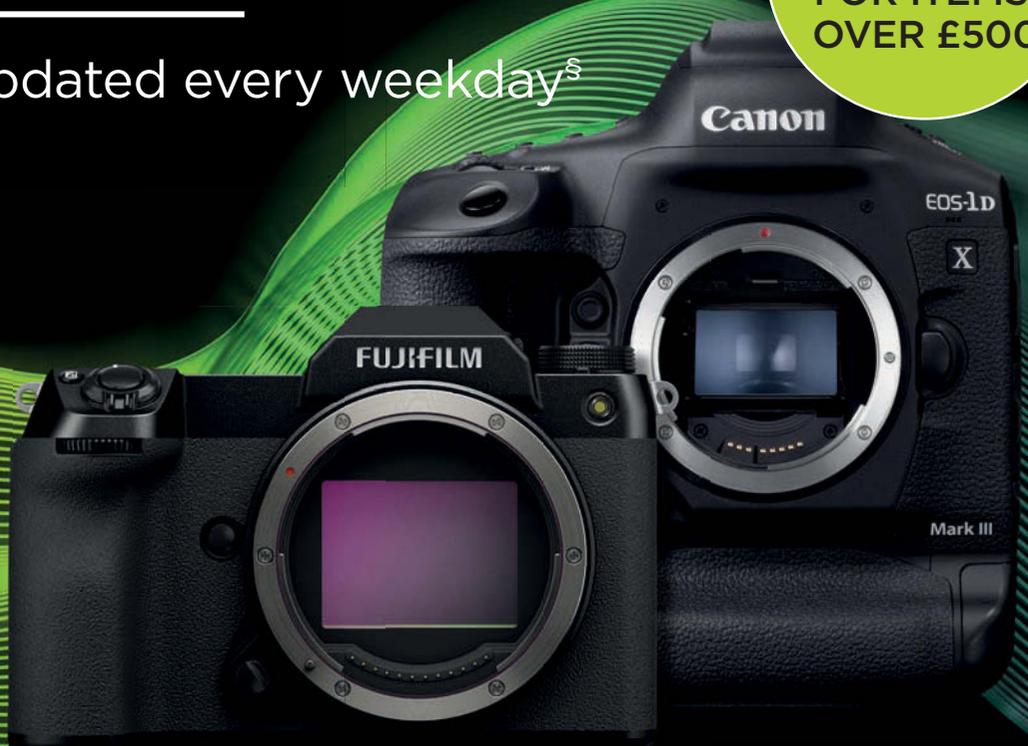
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Head of Market Neil Tillott
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LETTER OF THE WEEK

Customer care at its best

Seven or eight years ago I purchased two Peak Design 'Slide' shoulder straps and fitted them to a D600 and D90 which I had at the time, but due to other interests and buying a compact they were rarely used. Having recently retired I upgraded to D500 and Z6 Nikons, but when I swapped the straps to these I found an issue with the anti-slip features so I decided not to use them.

Rather than discarding them I contacted Peak Design describing the problem, not expecting a positive response especially as I had no proof of purchase and did not remember whether I had purchased them directly through Peak or through a recognised dealer. I didn't even know the year of purchase.

Much to my surprise I had a response from Peak a few hours later. Following email correspondence, within two weeks I have received free of charge, two new straps, which have been modified where I had the issue. I even had a choice from the latest colours.

All through the process they kept me informed by prompt emails. I even received an email from their CEO explaining the history and admirable policies of their company. This email is really something special and could be a lesson to any suppliers of any product, not only photographic.

John White



Peak Design offered great customer service on one of its camera straps

Win! SAMSUNG

The Samsung 64GB EVO Plus microSDXC memory card with SD adapter offers fast U1, Class 10 rated transfer speeds of up to 130MB/s, offers 6x Multi Proof protection and a Limited 10-year warranty. www.samsung.com/uk/memory-storage/



Doom and gloom

Back in the 1980s I was sitting in a courtroom, waiting for the judge to complete her deliberation and to deliver the verdicts when I overheard a pair of reporters who were sitting in the row behind me.

They were discussing the link between newspaper headlines and

sales. The senior journalist said to the cub, 'People say that they want good news, but they don't. The fact is, that the more horrible and threatening that we make our work, the more copy we sell. Our job is to sell newspapers. So, doom, gloom, and disaster, is how we make our living. Don't give the

public anything nice, they don't buy good news.' And in a way, his argument makes sense.

A local newspaper is a discretionary purchase. If the headline trumpets a threat, that might damage friends and/or family, then I might buy the copy, if only to find out what the threat is, and also to

discover if I can do something to protect my family. Similar tactics are used with charity advertising, which can often be best described as emotional blackmail. Undeniably, the sales tactics are effective, but they are also relentless.

There is only so much guilt and horror the public can stand. The fact that more of the public is now 'avoiding news outlets', is a disaster for politicians, journalists, advertisers, and also for democracy. But arguably, this change in public behaviour is a logical response.

David Price

Dufay colour film

I've just read John Wade's excellent article on the Dufay colour film process (AP 13 September). Although the technology was eventually superseded by Kodachrome and Agfa, I was struck by Dufay's similarity to the Bayer array used by modern digital photography.

Similarly, Kodachrome and other traditional colour films have inspired the Foveon sensor; which has never caught on. I suppose you could say Dufay has finally triumphed. Now where did I put that Betamax video?

Andy Finn

Goodbye DSLRs

Joshua Waller's *Viewpoint* (13 September) was sobering reading for those of us who have resisted the call to go mirrorless and stayed loyal to our DSLR cameras. Essentially he was saying DSLRs are already dead, and the fact that no new DSLR camera or lens has been released by any major brand for two years tells its own story. It's a shame though. Unfortunately we live in a throwaway world, and any attempt to change that



Tom Frost took this in Greenwich Park on his Canon RP

culture is always met by manufacturers effectively trying to force us to keep on consuming. As *Star Trek's* The Borg would say, 'Resistance is futile'.

Mel Lloyd

Depth of field

I wonder if you could cover stopping down techniques in an issue. I like to include lots of detail in some of my photos. Take this photo of Greenwich Park. I stopped down to f/20 on a Canon RP with an EF50mm f/1.4 USM lens at 1/125sec, ISO 800. I like the big depth of field with the Old Royal Observatory and the foreground in focus. I would appreciate some tips on achieving success with stopped-down lenses.

Tom Frost

This is a topic that we cover fairly regularly in AP and will be doing so again in the new year.

Pentax

Regarding the letter from Martin Marks, OBE. I am a Pentax devotee but that doesn't mean I haven't considered a move to Fujifilm – what can I say, I'm a sucker for retro. The reason I haven't made the move is I would lose too much (IBIS, weather-sealing, money). I shoot mainly with a KP but I also have a K-3, MX and Spotmatic. I love the fact

Most systems these days are wonderful, but it doesn't guarantee you will enjoy the user experience. Despite what the magazines say, the grass isn't always greener on the other side.

Peter Kay

X-T4 quality

I'd just like to sing the praises of the build quality of the Fujifilm X-T4.

Yesterday, I pulled up in my usual parking spot (as Gainsborough Trinity FC Official photographer), opened the boot to retrieve my gear, picked up my Lowepro bag and threw it over my shoulder when, in horror, I realised I'd thrown not only my bag, but an X-T4, complete with attached 100-400mm zoom, which was laid alongside! It landed on the pavement, and the only harm noticeable was a damaged lens cap and very slight scuff on the camera body!

Working through the camera menu once I'd arrived inside the ground, the only thing different was a change in film preferences (to sepia). I re-set it and hoped for the best; the results were, as usual, superb.

Russell Dickens



One of Russell's photos from his X-T4, which he dropped

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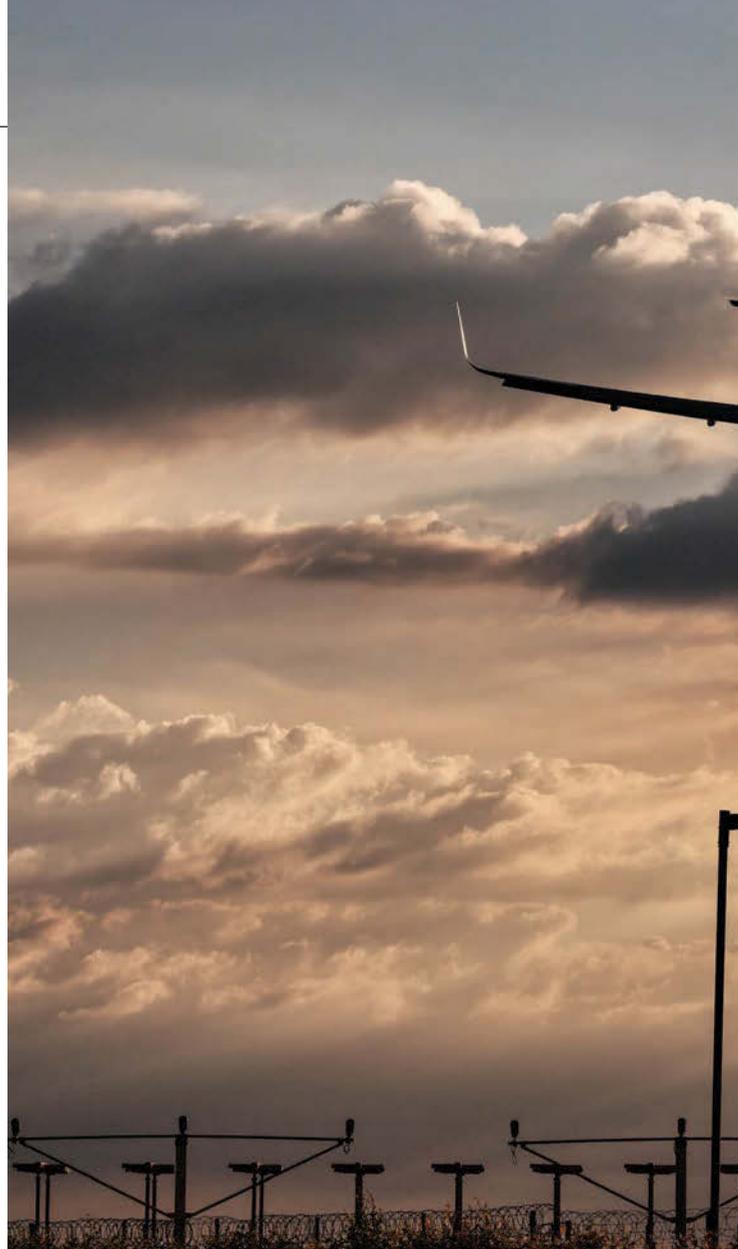


Fit to burst

Your camera's burst mode is a big help with action shots. **Will Cheung** shows how to make the most of this key feature without hitting the buffer



Flying seagull
1/2000sec at f/5.6,
ISO 800



Will Cheung



Veteran photography journalist Will Cheung has seen huge technological advances, especially with AF and burst shooting. Combine the two and the potential for wonderful shots is beyond imagination. www.williamcheung.co.uk

A fraction of a second is very brief in terms of time but photographically it's the difference between success or failure. Success means capturing that fleeting smile of a newborn, the ball leaving the face of the racquet or a bird in flight with its wings in the perfect position. Failure means hitting the delete key.

There is skill to getting a perfectly timed shot, whether that is catching a magical moment or pushing the shutter button at the instant key elements of a composition come together to make an engaging image.

This is what master photographer Henri Cartier-Bresson called 'the decisive moment' and what he achieved was incredible when you consider that he used a film camera with significant shutter lag.

For modern-day image-makers the decisive moment still applies and we are privileged in having at our disposal digital cameras that have minimal shutter lag and have burst or continuous shooting settings that enable us to take a stream of consecutive images at rapid speeds.

By comparison, a pro film camera could rip through a 36-exposure film in seven seconds at five frames-per-second (fps), and then you had to reload. With digital, depending on the camera, battery capacity, shutter speed and memory card you can blast away and take, literally, thousands upon thousands of pictures in super-quick time, and all for free. The latest cameras can shoot full-size raw files at 15, 20, 30 and 50fps with autoexposure and autofocus tracking (AE/AF), and those amazing speeds can be sustained for quite a few shots.

Fast shooters

Burst shooting rates vary from camera to camera and while being able to shoot lots of pictures quickly is a marvel of technology there is a serious practical benefit too for your photography.

The fastest continuous shooting rates are in single AF mode when focus is fixed in one position and that's simply because the camera doesn't have to make any exposure or focus calculations after making the initial reading for the first frame. However, select a slower burst rate and you may get AE/AF tracking. This is a huge benefit and mostly under-rated. So, as the subject moves towards or away from you and perhaps from bright sun into the shade and back again, the camera incredibly rapidly makes a great number of calculations to help get spot-on results on all the shots.

What shooting speed you get with AE/AF tracking depends on the camera model and as usual the more advanced or expensive the camera, the faster the





Coming in to land
1/6400sec at f/7.1,
ISO 400

KIT LIST

OM Systems OM-1

The OM-1 is the first model from OM Digital Solutions. It is a 20MP Micro Four Thirds camera blessed with blinding speed in key performance areas including autofocus and burst shooting. It can shoot raws at 120fps with AE and AF locked, and up to 50fps with AE/AF tracking with Pro zoom lenses. Factor in great handling too. **Om-digitalsolutions.com**

Nikon Z9

The Nikon Z9's electronic shutter can zip through full-frame raws at up to 30fps and if you need even more speed, it can capture 11-million-pixel JPEGs at 120fps with AE/AF tracking. If you are worried about missing a shot the Z9's pre-release image capture lets you record shots for up to one second before fully depressing the shutter button and the post release burst can last up to four seconds. A truly awesome camera. **Nikon.co.uk**



Puffin landing
1/2000sec at f/8,
ISO 500

Fujifilm X-H2S

With its stacked sensor, this is a very fast camera. In terms of burst shooting the X-H2S and its electronic shutter can race along blackout-free at 40fps giving full-size raws. Autofocusing has been given a serious uplift too and the X-Processor 5 has subject-detect AF based on Deep Learning technology that can automatically detect and track a wide range of popular subjects. A great start for the fifth generation. **Fujifilm.com/uk**

Technique BURST MODE



Left: A splash of red
1/160sec at f/5.6,
ISO 200

Right: Steaming ahead
1/1000sec at f/8,
ISO 400

▶ frame rate you get. Technology is racing along and recent models such as the Canon EOS R3, Fujifilm X-H2S and OM Systems OM-1 offer AE/AF tracking at 30fps, 40fps and 50fps respectively using their electronic shutters. Furthermore, you get this with blackout-free shooting so tracking a fast-moving subject is easy. For sheer speed the Nikon Z 9 can shoot 11MP JPEGs at 120fps and that is with AE/AF tracking, and the Canon EOS R3 gives up to 195fps with AE/AF locked.

An important factor to bear in mind, however, is that the quoted tracking rate is one thing but the reality is quite another, and not every shot will be perfectly sharp or well exposed. There are many variables to consider including shutter speed, the AF's system efficiency, the exposure system's reactivity, the subject itself and the biggest variable of all, you. After all, it is you that has to set the camera up, frame the subject and push the shutter button, but with practice great shots are yours for the taking.

Size matters

All these models mentioned are relatively new to the market, sit at the top of their respective systems and in some cases difficult to buy because of big demand and limited stocks. The camera you own might be more modest when it comes burst shooting capability – however you may still be able to shoot at 10fps, and that's still amazing when you think what a top film camera would have given you. But with our advice you can make the most of whatever burst rate you have available.

The point to remember is that a camera's shooting capacity depends on a number of factors: the size of the files you're shooting, the imaging processor, the size of the camera's buffer or internal memory and the write speed of the storage card.

Let's discuss these factors in turn, but first I'll say that the set shutter speed has an obvious impact too.

Basically, you get longer, more sustained sequences if you shoot in a lower image quality mode. Shooting



GOOD SUBJECTS FOR BURST MODE



Dragonflies in flight

If you want a real test of your tracking and focusing abilities, try dragonflies in flight. Some species are almost impossible to shoot successfully, except perhaps in set-ups, but some are photographer friendly; the migrant hawk and will hover for a second or two, so that's your chance to shoot.



Magical family moments

Use burst mode to help you catch those fleeting moments. If your camera has pre-shot mode, keep your finger partly down on the shutter button while you are waiting for that winning pose. Push the button when that moment of magic occurs and shots from 0.5sec earlier will be recorded to the card.



Birds on the wing

Photographing birds in flight takes patience and skill, and the more practice you put into it the greater the success you will enjoy. To develop your skills, head to the local lake or nature reserve. Fit a telezoom, select burst shooting, shutter-priority AE and animal/eye detect AF, if your camera has those options.



Sports action

Great action shots need good timing, but there's no doubt that having the camera set to continuous shooting is a great boon. It's not all about sustained and lengthy bursts of near identical shots, but when your dream composition materialises you can get several shots and then pick the best later.



Airplanes

Whether at an air show or standing on the perimeter road of one of the world's busiest airports, burst shooting is the way to go. There's no need for a long continuous burst of hundreds of very similar looking shots but shooting quick bursts of several shots at a time will give a variety of shots to work with.



Street sense

It is all very well trying to get the perfect timing in one or two shots but engaging burst mode and shooting a selection of images gives you the choice afterwards. With a sequence, you will always find one that has captured the moment better than the others, so try burst shooting on street shots.

landscapes in full-size raws is fine because speed is not a concern, but for burst shooting, consider shooting smaller size raws if your camera offers that option – C-Raw format on Canon or 12-bit on Nikon – or shoot JPEGs.

JPEGs are much smaller than raw files and there is less information to manage and move around so if you want the longest continuous burst possible, the take-away from this is shoot JPEGs only. Most cameras give the option of a range of JPEG sizes so you could go for a lower quality setting. It all depends on your end goal, so while smaller JPEGs might suit social media use, if you want make big prints stick with large JPEGs.

The JPEG format is not as editing friendly as raws so you're more limited in what you can do, but nevertheless it's the format many professional photographers use. Just be more considered with your technique and make sure that exposure and white balance are correct when you shoot.

Hitting the buffer

If you prefer to stick with raw, you need to control your shutter finger and manage your buffer. Keep your finger down on the shutter button and you may find the camera stops working, and that is because the buffer is full or you're using a slow card.

The camera's image processor receives data off the sensor, readies it for recording to card and holds it temporarily in its

internal memory or buffer until it is written to the card. Shoot lots and the camera will fill its buffer and slow right down or even stop until files are written to the card. It will only let you carry on shooting when the buffer clears enough memory to allow another shot to be taken and this might take a few seconds.

It's not just the buffer that impacts on shooting speed. It's a linear process so the sensor and image processor affect how quickly image data is processed.

Image sensors are front (FSI) or backside illuminated (BSI) and with recent top-end cameras we are seeing stacked sensors that can handle data very, very quickly. The downside of this sensor type is their cost.

Managing the buffer is relevant even with top models like the 45-million-pixel Canon EOS R5. Its raws are about 50MB and at 20fps you are producing around 1GB of data for every second of shooting. That's a huge amount, so it's no surprise it will slow down to catch its breath.

The camera makers rarely publish specific data on buffer sizes and only make a fuss of it if it's noteworthy. Sony, for example, boasts that its A6500's buffer is big enough for 307 images or 36secs of continuous shooting. However, camera reviewers will often test buffer size because it is important, so check out our reviews in AP.

But you can help yourself by managing your buffer. So, instead of keeping your finger stabbed down on the shutter button,



Why it works

Welney Wetland Centre, near Wisbech, Norfolk, takes in 1,000 acres of Ouse Marshes and is a popular spot for wildlife lovers all year round.

This greylag goose hadn't come from far away. There was a kerfuffle between a few birds and it decided to relocate a few metres to a quieter patch of the water. All the splashing noises alerted me and as I had the camera up to my eye shooting other birds, I quickly panned across, saw the goose and hit the shutter button – and managed a few shots as the bird flew over and landed with an impressive splash.

Obviously, it helped that the camera was already set up ready for photographing birds. So, on the Canon EOS R3, I had animal and eye-detect AF and the electronic shutter with continuous high drive mode selected, so that was giving a 30fps burst speed. The RF 100-500mm f/4.5-7.1L IS USM lens was fitted and that was set to 500mm. The exposure was 1/2500sec at f/8 and ISO 800, and the raw file was cropped and put through DxO PureRaw 2 before processing in Adobe Lightroom.



For me, I love the shot because it's almost like a portrait as the bird appears to be looking straight into the lens – I was in a hide so it couldn't actually see me. The eye contact, its expression and the position of the wings makes it an eye-catching bird shot with a difference.

learn to time your shots and capture in short bursts rather than in a single sustained long burst. However, this is easier said than done in the heat of the moment, and even more tricky with the camera's electronic shutter because in most models there's no audible indication of how many shots you are taking.

Play your cards right

How fast the buffer clears depends on the final link in the chain – the memory card. Clearly, the faster the card's write speed the faster it can record data coming from the buffer, and you won't be surprised to learn that faster cards are expensive.

Memory cards are quoted with read and write speeds and while these are a guide of a card's performance relative to others, they often bear little relation to actual read/write performance.

For photo genres such as landscapes or studio, card speed is a non-issue because you're not shooting long bursts of high-resolution stills – unless you are focus bracketing. However, if you aim to shoot long bursts of images or high-resolution video, invest in cards with the fastest write speed; read speed only comes into play when downloading files.



Above: Reflection of knots, RSPB Snettisham
1/1500sec at f/8,
ISO 500

Right: Contented grey
1/200sec at f/8,
ISO 1600



Memory cards are rated in classes or speeds depending on the card type and without wanting to get bogged down by the various card performance rating method, the best advice for buying micro SD, SD and CompactFlash cards is to look for a high MB/s figure (90MB/s or higher), class rating (C10, U1, V30) or record speed (633x and above). By the way, it is worth stressing to buy memory from a recognised retailer because there are fakes around and these can be very slow performers.

The fastest SD card around is the Sony SF-G Series (T) 300MB/s UHS-11 with a claimed 299MB/s write speed; a 32GB card costs £69. While with CompactFlash one of the fastest cards is the Lexar Professional 1066x with a write speed of 155MB/s. A 32GB version of this costs £50.

With cameras gaining in megapixels, speed and video resolution, faster memory is needed to keep pace which is why we have CFexpress cards; type A cards have a top data transfer speed of 1,000MB/s and Type B double that. The downside is cost. Sony uses Type A cards in its Alpha 7S III and Alpha 1 and a 160GB size 800MB/s card costs £399. More widely used is the CFexpress Type B card and a SanDisk 128GB Extreme Pro card costs £279.

Going back in time

While every digital camera has some form of continuous shooting mode, a few have a mode that lets you take pictures without taking pictures. Labelled Pre-shot mode by Fujifilm, Pre-release burst by Nikon, Pre-burst by Panasonic and Pro Capture by Olympus/OM Systems, what happens is that the camera starts taking pictures with partial depress of the shutter release and holds them temporarily in its buffer. Fully press down the shutter release and these

shots are recorded to the memory card and the camera keeps taking pictures as long as the shutter button is held down, buffer and card permitting. This pre-shot mode is incredibly useful if you're waiting for a specific moment to materialise such as a bird taking off, and means you don't have to rely on your reflexes or shoot continuously hoping for the action to happen before the buffer fills. So, it's a great time to explore burst mode, and do share your results: ap.ed@kelsey.co.uk



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Rotolight goes 'Pro'



Rotolight has just launched feature-packed new Pro editions of its acclaimed NEO 3 and AEOS 2 LED lights on Indiegogo



ByLumiere

'These lights are essential for our hybrid shooting,' say top wedding photographers Kate and Brent Kirkman (ByLumiere). 'For shooting both stills and video at weddings, we needed that all-in-one solution and we really found that with these new Rotolights.'

Rotolight has announced a new crowdfunding campaign for its NEO 3 and AEOS 2 PRO Edition lights. The new products come hot on the heels of the top-selling NEO 3 and AEOS 2, which as well as being the most successful photography and video LED light launch in the history of Kickstarter, received widespread praise from photographers and the wider industry – indeed, the NEO 3 was named Lighting Product of the Year in AP's most recent awards.

The new PRO Edition NEO 3 and AEOS 2 lights build on the success of the previous models. Key features and benefits include:

● Brightness boost

The new Pro edition lights offer up +25% greater continuous light output than previous

models, giving photographers more power whenever it's required.

● Godox compatibility

In an industry first, the lights have built-in Godox, Profoto, Elinchrom, Neewer and

Pixapro flash receivers. This makes it much easier for photographers wanting to wirelessly integrate their Rotolight lights into existing systems, or make use of transmitters they already own with Rotolight's RGBWW flash capability – a world first.

● Masters of Light preset packs

The presets include over 100 built-in exclusive special effects, gel and HSI colour presets, along with tutorial videos from some of the world's leading photographers and Emmy-winning filmmakers. SFX presets were designed by two-time Emmy Award winner Roy Wagner (*Nightmare on Elm Street*, *House*, *Ray Donovan*), Emmy-winning visual FX veteran Stefan Lange (*Batman*, *Tombraider*, *No Time to Die*), and Cinematographer of the Year 2021 Denson Baker (*The Colour Room*, *Ophelia*).

Meanwhile, the HSI/Gel presets were



NEO 3 Pro

What the photographers say

Sam Nash

'The new NEO 3 and AEOS 2 Pro editions lights are powerful, versatile, and will help take your photography or filmmaking to the next level,' says commercial photographer Sam Nash. 'The ability to recall my favourite presets at a moment's notice will save a lot of time. I'm also excited to be able to share with the Rotolight community my favourite gels and colours that I use on my professional commercial shoots for leading brands around the world. If you already like the NEO 3 and AEOS 2, you are absolutely going to love these.'



Jake Hicks

'As soon as I saw the light these new lights cast on my subject and how that colour dropped off on the skin, it was immediately obvious to me they were going to make my life a lot easier,' Jake Hicks, a Rotolight Master of Light, says about the new products. 'You have to see it to believe it.'

designed by leading portrait and fashion photographers Jake Hicks, Sam Nash, Jason Lanier, and Peter Müller.

You can select the presets directly from within the light or via the Rotolight app, with an on-screen colour preview, providing lots of powerful, time-saving creative options.

● Hardware upgrades

The new Signature PRO editions feature solid aluminium dials on the NEO 3 and metallic red anodised handles on the AEOS 2.

● True Aperture Dimming (FDIM)

Using bespoke technology developed by Rotolight, the lights can calculate and display the light output as an f-stop for a subject at a given distance, along with the ISO and shutter speed, eliminating the need for a light meter. This is a huge benefit for analogue fans.

● Kelvin presets

The lights feature new Kelvin presets in CCT mode giving quick access to popular lighting scenarios including 5600K (daylight), 3200K tungsten, 4600K (midpoint), again saving time on your shoot.

● Four new SFX features for filmmakers

These include 'Fireworks', 'Candle', 'Disco' and 'Throb' along with enhancements to SFX features already found in the standard models, designed by visual FX veteran Stefan Lange.

Early bird benefits

Rotolight has launched the new PRO Edition lights via Indiegogo in order to provide early access and exclusive discounts to the Rotolight user community. Backers can order their PRO Edition lights in a variety of options, including multi-light kits and accessory bundles, as well as becoming the first in the world to get their hands on the new gear. The Rotolight NEO 3 and AEOS 2 PRO Edition Indiegogo campaign was launched on the 18th of October and will run until the 18th of November 2022. **For more information visit: www.rotolight.com/timetogopro**



APOY
2022

In association with MPB



mpb.com

Amateur Photographer of the Year

Here are the top ten images uploaded to Photocrowd from Round Eight, Wildlife, with comments by the AP team and our guest judge

Round Eight Wildlife

Without a doubt, wildlife is one of the most popular and most tricky to judge categories in APOY every year. The sheer breadth of subject matter, style and skill on the part of the photographers entering makes it a wonderfully difficult genre to whittle down. The important thing is for the judges to be able to give equal time and attention both to the more physically impressive, majestic animals and the less 'obvious', more everyday or subtle creatures. The grandeur of a tiger photographed on safari can sometimes overwhelm a simple brown rabbit, and it's our job to ensure one doesn't drown out the other. Attention also needs to be paid to how creatively something has been photographed. Does a straight animal 'portrait' say everything you want to say about the subject, or could it be treated more creatively, or shot in different light? Many of our entries passed the creativity test with flying colours, and the sheer range of entries is well reflected in our top ten.

1 Gill Evans UK 100pts

Nikon D500, 70-200mm at 200mm, 1/3200sec at f/5.6, ISO 1600

Gill has captured a magical and breathtaking moment, which somehow manages to make an ivory gull appear more like an angel in flight. It is a long way from being a 'classic' wildlife photograph – which is why it instantly stood out to the judges. Her timing is superb. Not only did she release the shutter at the moment when the gull's wings were fully outstretched, but she also framed it against the darker blue of the Svalbard ice, making it stand out beautifully. Gill has combined artistry with a sense of context and environment, and as a result has created an image that is both original and memorable. Very well done.

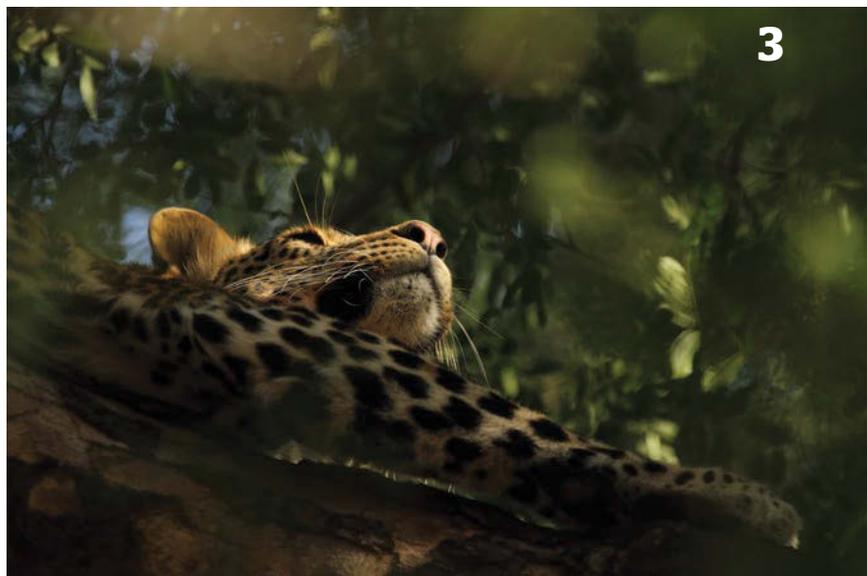




2 Lewis Newman UK 90pts

Nikon D500, 300mm, 1/800sec at f/4, ISO 640

Here we have another original treatment of a well-photographed subject, which is what made this image stand out among the many (also excellent) images of foxes we saw in this category. What Lewis has achieved demonstrates the importance of spending time with a subject and becoming aware of its patterns of behaviour. Having studied the family of foxes, he knew this vixen would often take a nap among the dandelions in the afternoon, so he made sure he was ready for the shot. To capture the fox in such a perfect profile shows great skill, and her closed eyes tell a story of the dandelion seed heads potentially irritating her. An excellent choice of aperture shows the viewer more dandelions, but blurs them so that they are not a distraction. A charming and unusual portrayal of this popular mammal.



3

3 Tracey Graves UK 80pts

Canon EOS 7D, 100-400mm at 400mm, 1/200sec at f/7.1, ISO 400

Tracey has chosen an intriguing angle for her shot of a leopard resting in a tree, and it wouldn't have been anywhere near as successful without the lovely soft light breaking through the leaves. She has focused on just the right spot, ensuring the cat's whiskers are pin-sharp, while everything else falls away into a pleasing blur. She's also taken care with the composition, placing its head on the thirds and ensuring the whole leg is included in the frame.



4

4 Sara Jazbar Italy 70pts

Unknown

An outstanding action shot from Sara, capturing a hoopoe at the moment it arrives to feed its young. Her timing is immaculate, and the desperation of the chick almost jumps out of the frame.

5 Juraj Bencik Czech Republic 60pts

Nikon Z 7II, 70-200mm at 110mm, 2.5sec at f/10, ISO 100

A highly unusual treatment, showing roe deer at a water station in a forest in Hungary. Juraj has ensured the animals' shape remains recognisable, and the sense of movement is well captured.

5





6 Ales Krivec Slovenia 50pts

Nikon D810A, 150-600mm at 150mm, 1/800sec at f/8, ISO 320

This magnificent ibex, photographed in the Julian Alps in Slovenia, almost appears to be posing for Ales's camera. The image is a great reflection of the animal's sheer presence and charisma, and the angles of its horns balance very nicely with that of the mountainside and peaks beyond. And despite it being so small in the frame, there's no getting past that beady eye.

ROUND EIGHT WINNER, YOUNG APOY



Vinay Badhe India 100pts

Nikon D7500, 200-500mm, f/5.6

Google the Indian paradise flycatcher and it'll turn up images of a gorgeously jewel-coloured bird, with sapphire-blue feathers on its head, and orange wings and tail. So for Vinay to choose to photograph one in silhouette is a bold move indeed – and it's one that has

paid off handsomely. Reducing the scene to tones of dark gold and bronze ensures our attention stays with the bird and its open-mouthed young, while the darker areas at the edges help create a pleasing frame. Waiting until the adult bird has turned to the side, so we can see its beak and crest, is crucial to the success of this atmospheric shot.



Winning kit from MPB

The gear our winners used can be found at MPB

Taking first place, Gill Evans shot her winning image using the Nikon D500. Launched in 2016, the AP review said, 'its combination of superb autofocus, fast continuous shooting and excellent image quality places it very much at the top of the list'. The APS-C DSLR features a 20.9MP CMOS sensor, ISO range of 50-1,640,000, 10fps shooting speed and 153 AF points. This excellent camera can be found at MPB for between £729 and £1,029.

In seventh place, Daniel Rossi captured his ethereal image using a Sony A7R IV. This full-frame mirrorless camera was launched in 2019 with a new 33MP sensor and can shoot at 10fps. When reviewed in AP it was described as having 'superb autofocus with extremely capable subject recognition' and as being 'one of the highest-spec'ed models in its class'. Pick up this model at MPB in like-new condition for £2,239.

Lynn Pascoe shot with a Canon EF100-400mm f/4.5-5.6L IS II USM. Launched in 2015, this lens is aimed squarely at wildlife photographers. It weighs 1,640g, features four stops of Image Stabilisation and is capable of extremely fast autofocusing. It's also weather-resistant and features a rugged magnesium body, and can be used on APS-C-sensor DSLRs to give a focal length equivalent to 160-640mm on full frame. This superb lens can be found at MPB for between £1,089 and £1,549, depending on condition.

To browse the extensive range of stock at MPB, visit www.mpb.com



7 Daniel Rossi UK 45pts

Sony A7 Mark IV, 105mm macro, 1/250sec at f/5.6, ISO 200



Guest judge Tesni Ward says:

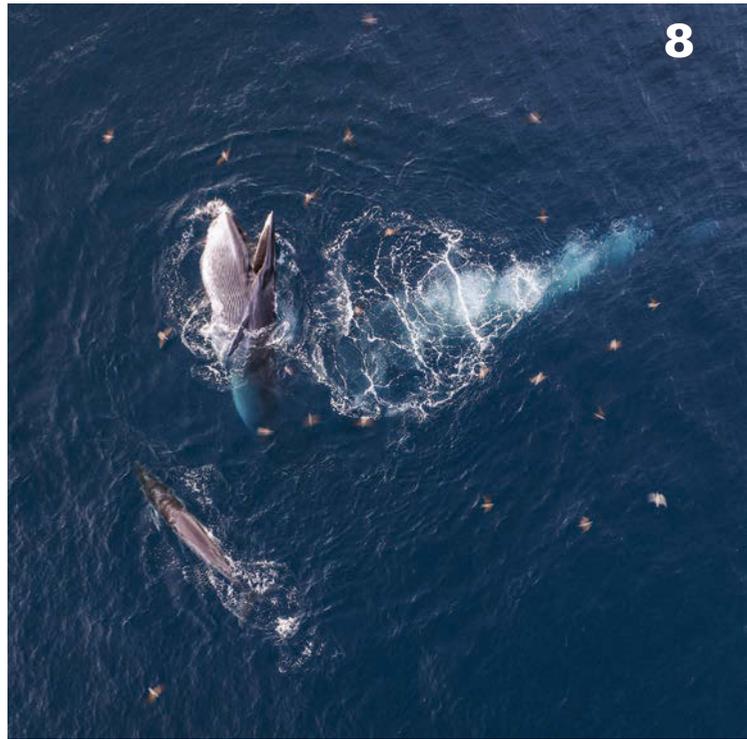
'The colour and ambience on this image is fantastic, with quintessential golden morning hues and great separation between the foreground and background, which adds depth and perspective. The foreground blue hues add a variety of colour, matching the main butterfly but also acting as a natural frame, which

helps to draw you into the image and keep you engaged. The spacing between each butterfly is so perfectly done that it's almost as if it was composed to show "X marks the spot": you can definitely tell a lot of thought went into the overall composition. I feel as if this image wouldn't have had the same impact if all five butterflies were all seen from the bottom or with their wings closed, as that vibrant blue on the top right butterfly really draws you in but also shows you the variety of colours on this beautiful species.'

9 Lynn Pascoe UK 35pts

Canon EOS 5D Mark IV, 100-400mm at 400mm, 1/800sec at f/5.6, ISO 125

This is a quiet image of a polar bear in Svalbard, but a very effective one. What makes it, of course, is the light. The halo that outlines the stately creature gives it dimension and depth. Without it, the picture would have been somewhat ordinary. Depth of field is spot on, giving context to the animal's surroundings and painting a picture of its environment, but our attention still goes directly to the bear. The viewer is left wondering where it has been and where it is going.



8 Nguyen Tan Tuan Vietnam 40pts

DJI Mavic 3, 24mm, 1/25sec at f/3.5, ISO 100

This magnificent female Bryde's whale and her calf are seen here hunting for their next meal. A drone is the perfect tool for capturing their power and strength, with the ripples moving outwards giving structure to the composition. The circling birds, hoping for an easy meal, help give a sense of scale and additional movement.



CAMERA CLUB HIGHEST SCORE

To see more images from APOY Round Eight and Young APOY, visit www.amateurphotographer.com/APOY2022

c0376237-ae6-40be-b0db-564dff3ef604 www.amateurphotographer.co.uk



10

The 2022 leaderboards

With only two rounds to go in this year's competition, it's tighter than ever. Anyone currently in the top ten stands a chance of a final surge and making it to the overall top place. With as many as four photographers in joint sixth spot, who knows what the final leaderboard might look like?

Young APOY is similarly close, and again, it's possible we could see some significant changes in the leaderboard as the competition reaches its closing stages. With everything to play for, none of the entrants can afford to slack off just yet.

The camera clubs result is looking rather more cut and dried, with Launceston Camera Club romping away in first place.

10 Tony North UK 30pts

Nikon D500, 105mm macro, f/13, ISO 640

Sawfly larvae aren't everyone's idea of an appealing subject, but Tony has captured them doing what they do best – munching through a rose leaf. Photographing them backlit against a dark background makes them stand out very sharply, and brings out the detail not only of the larvae themselves but also of the damage they are doing. An imaginative and unusual image.

CAMERA CLUB COMPETITION



Edward Payne UK 10pts

Canon EOS 5D Mark IV, 600mm, 1/320sec at f/4, ISO 200

Edward has captured an excellent shot of a bird of prey with its latest meal. Focusing is superb, and really makes the most of the bird's sharp, yellow eye. The golden tones throughout the image are very pleasing, too. Edward wins ten points for Reigate Photographic Society with his shot, which was commended.

APOY

1	Azim Khan Ronnie	280
2	Tommaso Carrara	250
3	Sabrina Garofoli	210
4	Nguyen Tan Tuan	190
5	Marco Tagliarino	185
6=	Bogdan Zarkowski	160
6=	Dominic Beaven	160
6=	Ian Bramham	160
6=	Inge Schuster	160
10=	Ales Krivec	150
10=	Pete Baker	150

YOUNG APOY

1	Yusef Naser	240
2=	Jake Kneale	190
2=	Kareem Ayman	190
4	Jamie Spensley	180
5	Pubarun Basu	165
6	Tallulah Cartledge	155
7	Lucy Monckton	135
8	Olivia Harris	130
9=	Ryan Kitchen	120
9=	Sarah Mills	120

CAMERA CLUBS

1	Launceston Camera Club	470
2	Kempsey Camera Club	280
3	Plymouth Camera Club	230
4	Royston PS	200
5	Bristol PS	130

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Amateur Photographer Mini Guide



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Angela Stoll's fine art dance shots

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Foil fast fowl-ups

For this action special, a range of seasoned pros point out some common mistakes when it comes to composing and focusing for subjects that don't tend to stay still for long

Vehicles, including planes
(Kingsley Singleton)



MISTAKE Picking the wrong lens

You don't need fancy lenses to shoot a good pan, but longer focal lengths can definitely give a look that's simpler and more effective. It all has to do with field of view. A wide view means you need to turn the camera more to pick up blur, which also risks blurring the subject. But cropped views, for instance at 200mm, need only a small movement to pick up motion and create a pleasing backdrop.

MISTAKE Losing focus

Following a moving subject can mean the AF point slips from it and the focus strays. To combat this, some photographers switch to manual focus, setting the point of sharpness on the part of the scene they know the subject will move through. Alternatively, use continuous AF and pick an AF point area that you can comfortably keep on the subject. Using middling apertures like f/8 will also help, keeping the subject acceptably sharp even if the focus strays slightly.



MISTAKE Speed kills

When panning, you need a slow enough shutter speed for the background to pick up plenty of camera movement as you follow the subject – but not so slow that you can't keep the subject sharp. Many people set speeds like 1/5sec or 1/10sec to get the blur, and wonder why everything is unclear. Depending on the speed of the subject, try speeds from 1/40sec to 1/100sec, check the amount of blur, and the sharpness of the subject, then push up or down as required.





Running dogs (Kingsley Singleton)



MISTAKE Skimping on the speed

You might think you're using a shutter speed that's fast enough to freeze the action, but even high settings like 1/500sec or 1/1000sec can show blur in fast-moving subjects. Play it safe by setting the fastest speed you can and remember that halving the shutter speed will effectively double the distance that the subject can travel across the frame before blurring. Otherwise, you can end up with soft dog shots, as below! If you need higher ISOs like 1600 or 3200, use them – modern cameras excel here and DxO PureRAW cleans up noise brilliantly.

MISTAKE Not turning enough

Turning 'steadily' can be crucial to a good pan. You need to follow the subject, keeping its position as consistent as possible in the frame. A good method is to point your feet in the direction that the subject is moving, which gives you better balance as you turn. Support the lens at its end for better stability, start the movement before you begin shooting and keep the smoothness going right through the pan, not pulling out of your turn until well after the final exposures are made.



MISTAKE Only using Eye AF

The Eye AF focus tracking modes in modern mirrorless cameras can be amazing so it's often a great bet for action. But regular tracking modes can do the job just as well or even better. In Continuous AF, pick the general tracking mode, and select a large AF zone, or a group of them, then position it so it's over the subject's head. Shoot in burst mode, too, so you can select the best poses after shooting.



MISTAKE The wrong moves

The hardest action shots to get sharp involve a subject running directly toward or away from the camera. As their distance is constantly changing, the AF and your framing have to keep up. For the latter, frame a little looser, knowing you can crop the image later, but also consider shooting the subject when they're moving more laterally to your position.

MISTAKE You're so shallow

Though many sports and action images are shot at a lens's maximum aperture, if the subject is moving directly towards you, depth of field can be a problem. Stopping down a little can give you a better chance of keeping things sharp – even though the point of focus may be the same, the depth of field will be greater.

For example, focusing at a distance of 10m, using a full-frame camera with a 200mm focal length at f/4 will give you about 60cm of depth of field – but f/5.6 gives you about 85cm – 25cm more acceptable sharpness to play with.

Young children (Maddy Rogers and Kerry Unwin)

MISTAKE Bad timing

Maddy always tries to shoot during the golden hour, about an hour before sunset so it's still bright and clear. This prevents harsh shadows and blown highlights, and also means that no one is squinting. 'I like to shoot where there is tree cover in an area with flat terrain, so the sun can get low. If it's a built-up area you'll need to shoot earlier in the day to get any sun, and it'll be too high and too bright; you can end up having to edit out buildings and traffic too. This time of year is ideal as the autumnal colours are so rich, and the dry leaves make great toys and props.'

Maddy recommends placing the sun behind your subject, with them in the shade. This creates a gorgeous effect when it breaks through the trees, and faces remain easily visible without the sun bleaching them out.



MISTAKE Only using an optical viewfinder

Maddy switched to a Sony A7R III and finds the 'live' screen a godsend. 'When chasing a toddler, it means I can look at the screen, and at the area around the subject and the light, all at the same time – instantly switching my eyes from one to the other without needing to take the camera up to my face at all. The facial tracking is superb, keeping the subject sharp.'



MISTAKE Allowing in too much noise

Unlike some of the pros in this article, Maddy avoids using a higher ISO because she wants to have clear images, without excess noise. 'If you shoot during an autumn evening then perhaps you'll need to raise the ISO a touch, but I'd rather move my session from a dull evening and reschedule for a sunny one anyway.'



MISTAKE Only using zooms

Maddy's Sony 35mm f/1.8 prime lens gives a wider angle, which means more room to play with in terms of distance from the child. It also makes her get closer to the child and engage with them more, which in turn helps to keep their interest. 'For a toddler, I use sleigh bells, and a puppy training clicker! Neither work for long, however, so maybe save them for the family shots when the toddlers gets annoyed at being held still.'





MISTAKE Only using primes

It's not really a 'mistake' to only use primes, more to do with preference. Kerry Unwin prefers to use a longer lens such as the Nikon 70-200mm f/2.8 for its beautiful bokeh, so uses this with older children; but compromises with a shorter lens in order to get closer and interact better with younger ones. 'We often get hung up on the perfect backdrop/light etc, but the most important thing for the parents are the faces of their kids.'



MISTAKE Slow shutter speeds

Kerry doesn't tend to go any less than 1/500sec and adjusts her ISO around that by setting it manually, rather than using auto ISO (though she notes there is nothing wrong with using this). She always uses continuous AF rather than single-point AF, in order to make sure she doesn't miss focus with fast-moving children. With groups of kids she puts them together on a log or similar object, to help with the composition.



MISTAKE Allowing kids to get bored

As with Maddy, Kerry works hard to build a relationship with the kids, including taking toys, singing stupid songs and making fart noises! 'I also carry a healthy supply of sweets if all else fails, checking with parents that it's okay to hand them out.'



MISTAKE Stopping down too much

As Maddy is usually at least a couple of feet away from the child, she is happy to shoot at a wide aperture. 'Shooting at f/2 gives you a gorgeously narrow depth of field, but the further away you are, the wider that becomes, so you can play with the effect. The shutter speed needs to be fast enough to prevent a toddler blurring out, but I also need to balance this with keeping my ISO down. I work one shot a time, making adjustments.'

Technique

Birds and insects (Guy Edwardes and Ross Hoddinott)

MISTAKE Letting the ISO drop

To get a fast enough shutter speed for photographing birds, Guy Edwardes is adamant that you should be prepared to use higher ISOs. He's observed that attendees on his workshops seem to be preoccupied with keeping noise to the minimum; he's never been that bothered with noise, having shot with colour transparency film – 'the noise we get now doesn't even compare to that!' Guy keeps his ISO relatively high, even when doing bird portraits, as he's always looking for that action shot. He likes to maintain a minimum shutter speed of 1/2000sec, nearly always at a wide-open aperture, and at whatever ISO is necessary for the correct exposure. He will go as high as ISO 8000 on his Canon EOS R5, and even ISO 12,800 in exceptional circumstances. Guy favours Topaz Denoise AI, which he thinks is great for reducing noise in defocused backgrounds without destroying feather detail.



MISTAKE Not using eye-detection AF

Guy reckons we are in a transitional period at the moment with AF, with eye-detection AF becoming more common. He uses the animal eye-tracking mode on his EOS R5 in many situations. As Guy notes, using the eye-tracking means that all of the AF points are active, so the bird doesn't need to be in the middle of the frame. This, he reckons, is a big help when it comes to composition.



MISTAKE Not giving the bird enough space

You always need to give the bird space to move into, either in front of it, or any suggested flight path it might follow. Guy tries not to frame flying birds too tightly, as there would be more chance of clipping the wing tips.



MISTAKE Not using manual exposure

Guy tends to use manual exposure for birds in flight. 'If you are shooting a white egret and the background keeps going from shadow to green fields to blue sky, every shot will be differently exposed if using any of the automated exposure modes.' Guy takes a quick test shot, reviews the histogram and adjusts the exposure. The bird will then be correctly exposed in every frame, regardless of the background tone. This then allows him to concentrate on composition and focus.

PICTURES ON PAGE 40 © GUY EDWARDS



© GUY EDWARDES

MISTAKE Freezing everything

With flapping wings, Guy reckons it's nice to see some movement, so you don't always need to freeze them completely (though your hit rate may decrease). Panning at a slower shutter speed helps to get some movement in the wing tips, depending on the bird. Guy turns image stabilisation (IS) off if his shutter speed is over 1/1000sec. He finds this improves the AF acquisition and tracking, as power is not being drawn away to the IS. On speeds lower than 1/1000sec, he has the IS set to Mode 2 on his EOS R5 so he can pan freely with only the vertical movement stabilised. Guy sometimes uses flash for small fast-moving birds, particularly hummingbirds, as it helps to keep the body sharp.

MISTAKE Only using the electronic shutter

When using the electronic shutter on his EOS R5, Guy has noticed the rolling shutter effect on very fast-moving birds such as hummingbirds, so he prefers to use the mechanical shutter (with the electronic shutter, he's also noticed unsightly horizontal lines on seabird images when zoomed in at 100%). 'This will vary depending on the camera type you are using, however, and Sony seems to have got onto this problem better than some of its competitors.'



© ROSS HODDINOTT

© ROSS HODDINOTT



MISTAKE Too low an ISO with insects

Ross Hoddinott also reckons many of his students are too conservative with ISO. 'It's not just that the insect is moving, you are working at high magnification so your movement is exaggerated too.' Ross tends to push ISO up to 1600 or 3200, depending on the light – even on a tripod, as you will need to capture even the tiniest bit of movement. 'If using a tripod, I adjust ISO manually, then set manual exposure and auto ISO.' As a minimum he recommends 1/500sec when the insect is moving around.

MISTAKE Going in too deep

Ross Hoddinott prefers to use the shallowest depth of field he can get away with on his insect shots, in order to create an attractively defocused backdrop. This also generates a faster shutter speed. 'When shooting handheld with larger insects in good light I will use autofocus, but on a tripod with a more static subject, manual focus gives you more control.' Ross varies his technique depending on the insect and situation, but notes that larger insects such as damselflies and butterflies usually involve a similar approach.

Thanks to the pros involved in putting together this article, several of whom also run regular workshops and courses.

- Kingsley Singleton: www.kingsleysingleton.com
- Maddy Rogers: www.maddyrogers-photography.co.uk
- Kerry Unwin: www.kerryunwinphotography.co.uk
- Guy Edwardes: www.guyedwardes.com
- Ross Hoddinott: www.rosshoddinott.co.uk

Do try and **ke**

Master of nature

Ben Hall



Ben is a multi-award-winning nature and landscape photographer with an impressive portfolio so check out his website. While you're there, take a look at his courses and workshops that cater for beginners upwards. Benhallphotography.com

I shoot a wide range of nature subjects but if photographers want to shoot fast-moving subjects there's huge potential and opportunities with birds.

I use Canon DSLRs, the EOS-1D X Mark II and the EOS 1D X Mark III. I haven't gone mirrorless yet but I will next year. I've tried the EOS R3 with its animal/eye detect and it worked really, really well. It just locks on the eye so I can leave the camera to look after focusing and I'm free to concentrate on composition.

I use the EF 300mm f/2.8 for flight shots because its AF is so quick but also the EF 70-200mm f/2.8. It is a bit short for wildlife but it's great when I can get close or when shooting bigger birds such as geese and swans. For smaller birds, it would be the



Capturing a kingfisher in flight takes practice and the right set-up
Canon EOS-1D X, EF 70-200mm f/2.8, 1/4000sec at f/7.1, ISO 2000

300mm or even the 500mm f/4.

My favoured focus zone is the expanded single-point setting where there is one zone in the centre and four extra zones round it and this gives a little more margin for error when tracking the bird.

Six years ago I switched to back-button focus. It took a lot of getting used to but I

forced myself to use it. The advantage with the AF-ON button is that it is two controls in one. I leave it set to AI servo so when I hold it down with the thumb, the camera is focus tracking but if I push it down once to focus and then release it, I can recompose without the focus changing when I take the shot.

With subjects such as ospreys, I start with the focus point in the centre of the frame and then move it very quickly left or right using the focus joystick depending on the bird's flight direction. If it is flying from right to left, I prefer more space in front of the subject so I move the focus block to the right to give the composition more space on the left for the bird to fly into.

For flying birds I try to get the shutter speed up to 1/1000sec for most birds and with faster smaller birds I use 1/2500sec. That does mean using a high ISO so I try to shoot those subjects in better light so I don't have to go crazy with the ISO. My mental limit is ISO 3200 and but with fast lenses I often get away with ISO 1600.

For newcomers to flying birds, I'd say start with something like a swan, a slower flying, bigger subject that you can find in the local park. Use the centre point AF with an expanded area and then practice, practice, practice.



Ben is an advocate of back-button AF which, in effect, is two controls in one
Canon EOS-1D X, EF 300mm f/2.8, 1/4000sec at f/4, ISO 2000

ep up

Kids and pets aside, how do you cope with really fast-moving subjects such as jet planes, athletes, kingfishers and motorbikes? **Will Cheung** gets some expert tips from four fast-living pros

Aerial heaven

Darren Harbar



Darren took up aviation photography as a hobbyist and now has a worldwide reputation. He sells images off his website and at airshows, plus he offers training and workshops including the chance to shoot a Spitfire and a Lancaster. www.darrenharbar.co.uk

Jets are faster than propeller planes and they are easier to photograph. You set a fast shutter speed and off you go. Planes with propellers are much more challenging and that's why I love photographing them.

I currently use a Canon EOS-1D X, a camera I've owned since it came out. It is a durable workhorse, does everything I want, and even when it's thrown about in the back of the plane during air-to-air shoots, it keeps going. My standard lens for airshows is an EF 400mm f/4 DO lens. You need at least a 300mm lens but a 400mm or 500mm is better plus a teleconverter helps.

Getting great captures of jets can be easier than prop planes. This is a Typhoon
Canon EOS-1D Mark IV, 400mm f/4 DO lens with 1.4x extender, 1/500sec at f/9, ISO 200



I have the camera set to shutter-priority AE with partial metering mode. I shoot raw so I can adjust exposure in editing but the important thing is to use exposure compensation and how much depends on the plane. I normally have +0.3EV dialled in but if it is a plane with a dark or black underside like the Lancaster I might step it up a bit. You also need to take into account what the sky is doing. Too much compensation can burn out a cloudy sky while with a blue sky you can get away with less compensation.

For ISO, I try to keep it down to ISO 200 and then increase it when the light is less good; while for autofocusing I mostly use single spot AF, sometimes using the expanded single spot. I prefer the single spot because I think it is much more accurate telling the camera what I want it to focus on, rather than letting it choose.

The thing about aviation photography and camera set-up is that you have to keep modifying settings through the day as circumstances change.

The most important setting for propeller planes is the shutter speed because you want movement in the blades, not frozen which looks wrong. What to set depends on the aeroplane and the RPM of the propeller. So, if you were to photograph a WW1 plane with a slow-moving propeller

you would have to use a much slower shutter speed than, say, a Spitfire where you can get away with 1/250sec to get movement into the propeller. With a Sea Fury or a modern acrobatic plane you can use a faster shutter speed.

It's also why helicopters are challenging subjects because their rotor speed is so slow. They are fun to try shooting but often you need shutter speeds around 1/30sec to get blur into the rotor blades.

The best advice is to shoot with the slowest shutter speed you are comfortable with, and realistically 1/125sec is a safe bet for prop planes with 1/250sec the top speed. This what I found in my experience but I often go down slower and shoot as slow as 1/20sec handheld depending on what look I want and this is without any form of camera support.

Darren has a worldwide reputation for his air-to-air photography. This was from an encounter with a Lancaster. Canon EOS-1D X, EF 70-200 f/2.8L USM at 70mm, 1/100sec at f/25, ISO 200

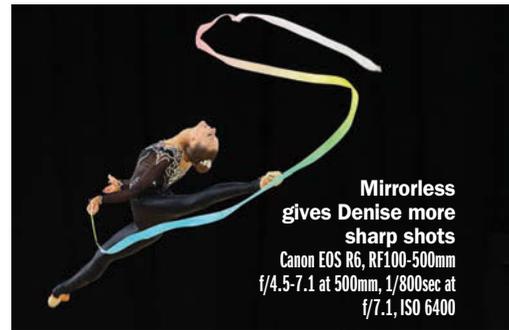


Getting movement into helicopter shots is tricky because of their slow rotating rotor blades
Canon EOS-1D X, EF 400mm f/4 DO, 1/50sec at f/29, ISO 200





Eilish McColgan on her way to victory in the 10,000m final at this year's Commonwealth Games
 Canon EOS R6, RF100-500mm f/4.5-7.1 at 500mm, 1/800sec at f/7.1, ISO 2500



Mirrorless gives Denise more sharp shots
 Canon EOS R6, RF100-500mm f/4.5-7.1 at 500mm, 1/800sec at f/7.1, ISO 6400

with high speeds but it depends on the situation. When I am shooting for press I have to get a sharp image. At the closing ceremony of the Commonwealth Games I had the RF 800mm f/11 I'd hired and had been using it all day. I hadn't planned to use it in the evening but I thought I'd give it a try and shot at ISO 20,000. I got the shot and the image is very usable.

I do think it is interesting that photographers spend thousands and thousands on advanced kit and still feel the need to shoot at ISO 400, just like they did on their older digital cameras. I've no problem using the latest technology.

I shoot both aperture-priority or manual mode depending on the situation. When the light is constant I shoot manual mode and I will use aperture-priority when the light is changing a lot.

Shooting sports can be challenging. I photographed the London Marathon recently. I checked the weather forecast beforehand and it was due to rain all day. I took full waterproofs and my umbrella hat which everyone laughs at it but it works. It is a wide one so my hands are free and it shades my lenses from rain. In the event, the weather was beautiful.

And they're off!

Denise Maxwell



Denise has been a professional photographer for 11 years starting with event and portrait photography after leaving a full-time NHS role. Her versatility has been key to her success. To find out more about Denise and her courses and workshops, see lensi.co.uk

For an athletics meet I'll take at least three cameras and four lenses, typically the 16-35mm f/2.8, 24-105mm f/4, 70-200mm f/2.8 and a 150-500mm f/5-6.3 for outdoor events or a 120-300mm f/2.8 for indoor events when I need the extra stop of light. Then I would have a host of other things: a small tripod so I can place a camera with a wide lens and remote trigger near the finishing line; a monopod; a laptop so I can file images straightaway; an action camera for social media; rain covers; and hand warmers – so my bag's contents is varied and heavy. I weighed the outfit I used to shoot this year's Commonwealth Games and it was 16kg. In the ten days of the Games I lost over 3kg lugging it around.

I have two Canon EOS 5D Mark IVs and I recently bought two mirrorless bodies, an EOS R5 and EOS R6. They do make my life easier, and who doesn't want an easier life. The auto eye detection is really useful when shooting runners in the home straight, for example, when I can reframe and the eye detection sticks with the subject. I also get

far fewer lost shots due to poor focusing and I'd say I am getting 90% of my shots in focus even with fast-moving indoor events such as gymnastics. Recently, I was shooting next to a photographer using a DSLR and he lost loads of shots through poor focus and I was scrolling through all my sharp ones.

Having an EVF makes a big difference too because I can see immediately if there is anything wrong with exposures so I can react much more quickly.

In terms of ISO, if I can shoot at lower settings I will but if it is a case of not getting an image or using a higher ISO, I will always choose a high ISO. I am happy



Daryll Neita and Elaine Thompson-Herah in the women's 100m at the Commonwealth Games

Two wheels or bust

Adam Duckworth



Adam's interest in photography is wide-ranging, from Ansel Adams to street, products and portraits, but he is now best known for his action work and runs his own app called Motohead.
Motoheadmag.com
Adamduckworth.com

This year I have been to 18 motocross meetings around the country to shoot for my Motohead app and for clients. Honda UK is my main client so I shoot all the team's pictures, the bikes, the riders in action and so on.

Nowadays, the Sony Alpha 1 is my main camera with an Alpha 9 as a backup. I also have an Alpha A7S III for video. I use the Alpha 1 for video too because it shoots amazingly high-quality footage. My two main action lenses are the 70-200mm f/2.8 G Master II and the 100-400mm f/4.5-5.6 G Master but I also have a 16-35mm f/2.8 and a 24-70mm f/2.8.

Me and the kit have to cope with all sorts of challenging conditions. Dust, rain, cold, mud being flung at you, the whole lot. Last year, I was in a torrential downpour, almost biblical, and the Alpha 9 packed up; but I had a spare in my photo vest, which aren't the height of fashion but they have loads of pockets. Over the years, I have spent so much money on camera covers, lens covers, all sorts but there is no perfect solution and I have to improvise. I wear glasses too so when it rains really heavily, working conditions are a nightmare.



Adam uses back-button AF and the focus lever to move the AF point around to what he wants sharp
Nikon D4, 70-200mm f/2.8, 1/1600sec at f/5.6, ISO 200



Motocross is a sport where great shots are possible without press accreditation
Nikon D4, 300mm f/2.8, 1/1600sec at f/3.5, ISO 100

I have press accreditation but I often stand with the spectators because you get a better angle. It depends on the track. At the British Motocross Grand Prix at Matterley the crowds are ten deep so I need the press pass to get to a good spot, but at several venues, apart from the start, I'll shoot from the spectator side of the fence.

The way I see it, when shooting stills of action you are trying to give the impression of movement. With a car on a track, this means panning and a slow shutter speed for blur – a standard technique that works.

The benefit of shooting motorbikes is that they lean over when they go through corners so your brain recognises that something is happening and that the bike

is moving. You can shoot a motorbike at 1/1000sec and you get the feeling of movement; shoot a car going around a corner at the same shutter speed and it looks like it's parked.

You can also see the rider, their body, the angle of their arms and legs, so it is easier to get the feeling of speed and I often use 1/1600sec. This typically then means a wider lens aperture for that nice blurry background look which I really like.

For AF, I don't use any of the fancy technology. I use back-button AF and just have a servo single point that I move around with the joystick to what I want sharp within the composition. It's the same technique I've used for years. I don't trust those funky modes which sometimes work, but sometimes they don't.

I've shot raws for years but stopped when I got the Alpha 1. If I shoot 50-million-pixel raws at 20fps I can come back from a two-day meet with a 1TB worth of shots. That's a lot. Also, clients need shots as soon as a race finishes, so now for the first time ever I shoot JPEGs only.



Coping with poor weather can be a challenge

There in a **fl**

This special issue has so far focused on upskilling you for a range of fast-moving subjects, such as birds or vehicles, so it might be odd to turn our attention to the subject of still-life. The term still-life naturally conjures up the idea of stillness. While this is undoubtedly true of the end result, it doesn't necessarily mean that the subject itself must be static, however.

Through the skilful and considered use of high-speed flash, where ultra-fast subject movement is frozen in space and time, this genre of photography can reveal a unique and visually fascinating world, and one which is otherwise imperceptible to the naked eye.

One of the most unique aspects of photography is its ability to extend far beyond the capabilities of human vision, whether through long or short exposures. But it's through the use of high-speed flash that product photographer Ian Knaggs reveals the beauty that can be found within a fraction of a millisecond. Ian enjoys the challenge of using and shaping light alongside creating images and has received recognition in international competitions.

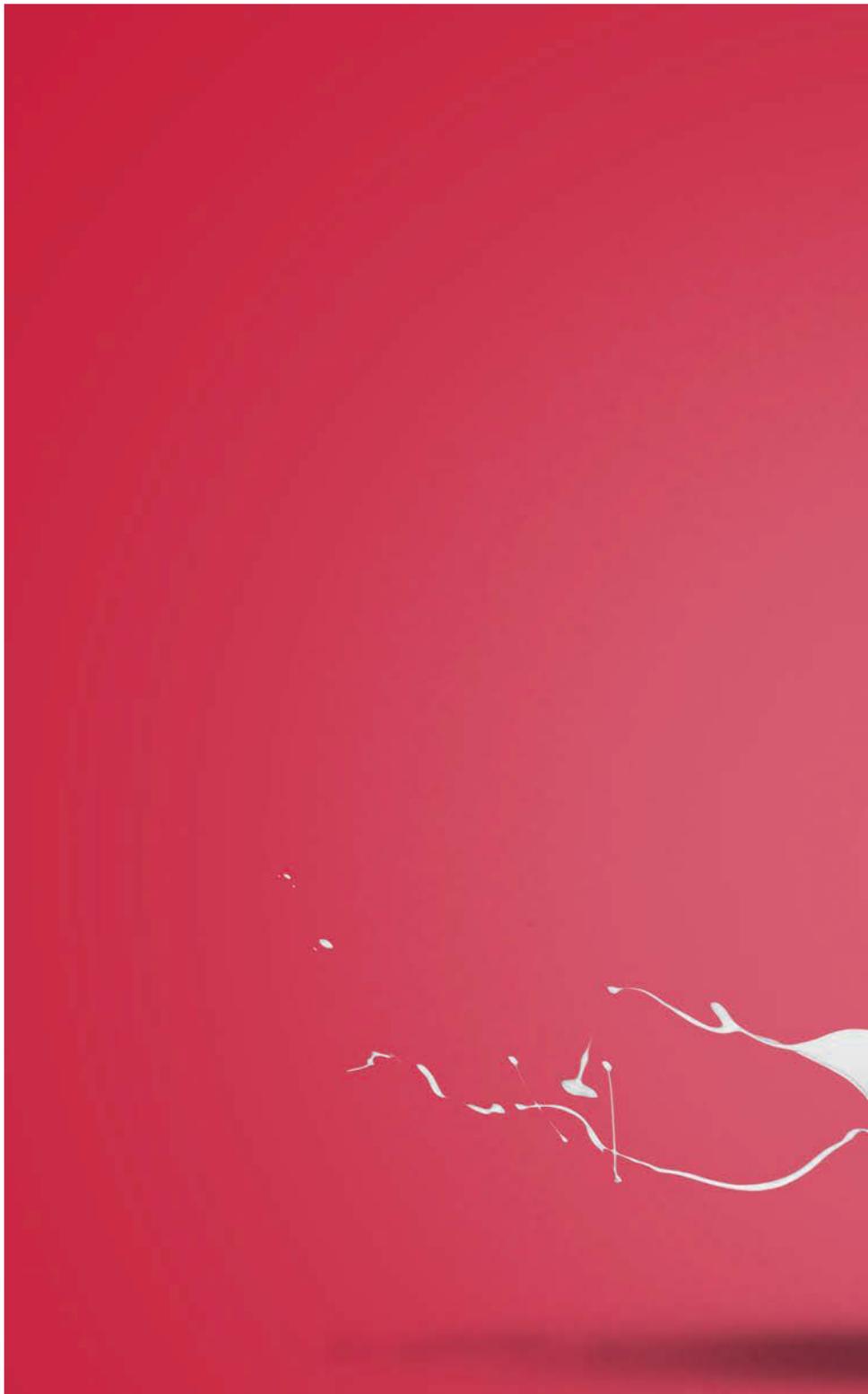
High-speed flash disregards shutter speed to rely on incredibly short flash durations that effectively far exceed the fastest shutter speeds cameras are capable of, and as you can see, the results can be spellbinding.

Ian Knaggs



Coming from a technical background, acclaimed studio product and still-life photographer Ian creates distinctive colourful images with a touch of humour. He also runs seminars. www.ianknaggs.com and see his Instagram at [@ik_product_photography](https://www.instagram.com/ik_product_photography)

ALL PICTURES © IAN KNAGGS



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High-speed flash is an invaluable creative tool for capturing fast-moving action. Product photographer **Ian Knaggs** reveals how he captures graphic still-life scenes bursting into movement



KIT LIST

Tripod

A tripod is an extremely useful accessory for high-speed flash combined with still-life. Not only does using one free your hands to hold other items, but it also allows you to fix the composition.

Shutter remote

Using a shutter remote allows you to fire the shutter without having to touch the camera. They can also be combined with the camera's self-timer to delay exposure if you need your hands free.

Wireless flash triggers

Manual wireless flash triggers or TTL triggers with a manual mode are essential for firing the flashguns that will typically be positioned away from the camera for more interesting lighting.

Flashguns

Flashguns are ideal for high-speed flash because you can reduce their power output to much lower levels than most studio flash units. Flashguns with manual power settings are essential.

Flash modifiers

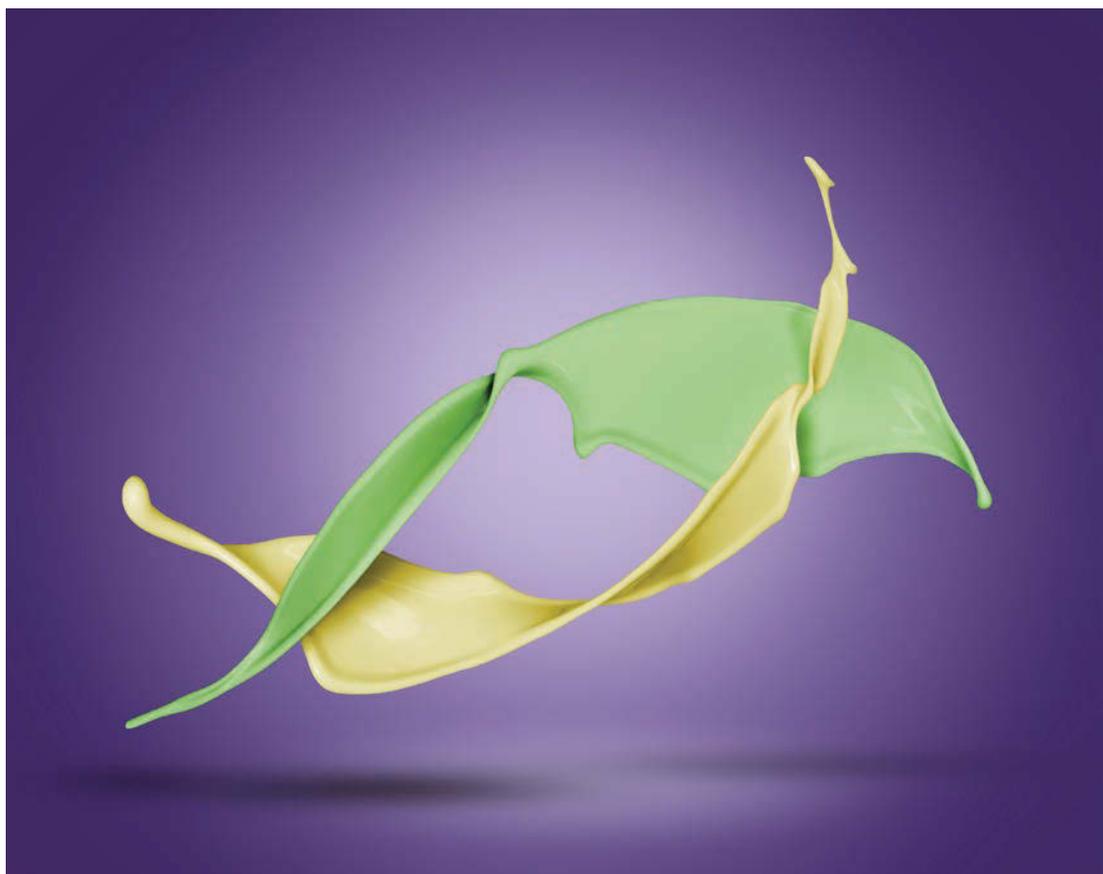
Flash modifiers such as softboxes, snoots and honeycomb grids are useful for controlling and shaping light, and there are lots of options for flashguns.

Double Splash

To create this image of two paint splashes twisting around each other, Ian used diluted white emulsion paint to create a more solid splash. Different effects are created by varying the amount of water in the mix to adjust the viscosity, and colour can be added during post-processing.

The image was taken in Ian's garage (where the clutter was less of an issue than in his studio) using two flashguns, both fitted with 90cm x 20cm strip boxes. The main light was positioned high and to the right, while the fill light was level with and just to the left of the camera.

Ian used a wideangle lens as it's difficult to be sure exactly where splashes are going to end up in the frame. And to freeze the fast movement, he used short flash durations equal to approximately 1/5000sec for the main light and 1/12,000sec for the fill light in a dark room.



Balloon Burst

Bursting a balloon full of water is a classic high-speed subject that captures the exact moment the balloon bursts, just before the water leaves its original shape. And here, Ian experimented with audio triggers combined with high-speed flash in his garage. As he recalls, it took many attempts to get the shot, with water building up everywhere.

The technique Ian developed for this type of shot was to hang a water-filled balloon and pre-focus on it. The lights were then turned off, the shutter release pressed – with a 1.6-second exposure – and the balloon was burst using a pin on a stick. The sound from the popping balloon triggers the flashes before the shutter closes. The trick is to shoot in a completely dark room, so the only light reaching the camera sensor is from the flashes.

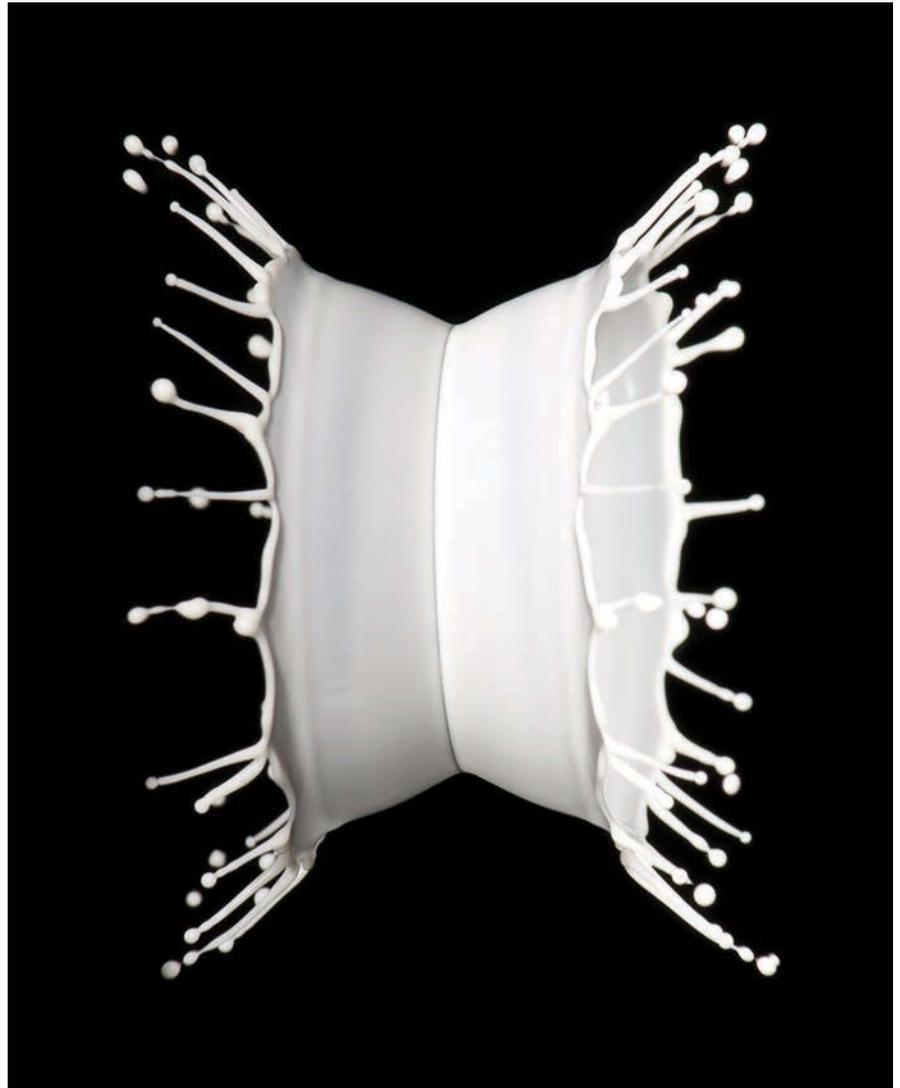
The left light was positioned between the camera and balloon, and one on the right was placed slightly behind the balloon to create a rim light. No modifiers were used since the two Yongnuo YN560 flashes were set to minimum power of 1/128 and were triggered using a HiViz Multi-Trigger audio trigger. 1/128 power of this flashgun equates to approximately 1/23,000sec.

Dairy Duplicity

Dairy Duplicity is a simple crown splash image created using cream exploding onto a black acrylic surface for a reflection that has been rotated to create a butterfly-like shape. 'Creating the reflection in post-processing looks fake, so the only answer was to capture it in-camera using a 105mm macro lens to capture the tiny crown as it formed,' notes Ian.

The cream was dropped from a pipette onto a piece of black acrylic – the acrylic creates a clean reflection, unlike the double-reflections that are present when using a glass surface. The lens was pre-focused on the drop spot and then it was set to manual focus to lock it. A single flashgun was then positioned to the left and above the camera, pointing towards the splash area.

As Ian notes, speedlights are ideal for these types of macro images as they are super-small and can be easily positioned close to the subject, without the need for using any modifiers. The Yongnuo YN560 was set to 1/64 power to minimise any motion blur as the crowns are only visible for a fraction of a millisecond. As this is a kind of macro shot, the camera's aperture needed to be narrow so the ISO was raised to 400.



Popping Popcorn

High-speed flash photography isn't limited to liquids. Here the colourful popcorn packaging was screaming out for a simple composition and contrasting colour scheme. Further interest was created by positioning the popcorn so it appears to be falling off a table edge. To achieve this, a square piece of card with a wire attached to the centre was placed in the bottom of the container before filling it with popcorn. Pulling on the wire quickly made the popcorn 'burst' out of the top and the wire was easily removed in post-processing. The image was less messy to shoot than others, and the bonus was that Ian could enjoy a snack once shooting was over.

Two Godox QT600 studio flashes fitted with 90cm x 20cm strip boxes were placed to the left and right of the camera and triggered using Pocket Wizard Flex TT5s. The left light was positioned between the camera and popcorn and the right unit was placed slightly behind the popcorn. Not all studio flashes have a short flash duration, but the Godox QT600 can be set to as low as 1/128 power for a short flash duration, which was the setting used here.



Photo Insight

The Journey of a Moth

By Tibor Litauszki

Tibor Litauszki tells **Damien Demolder** about his night photography technique and how he captured this wonderful award-winning image

The typical life-cycle of an amateur photographer generally involves discovering the egg of photography in our teens, devouring all the information we can



find like caterpillars, cocooning the camera for all but family occasions once children come into our life, and then a re-emergence of our magnificent creativity once they've left home and time becomes our own again. Not wanting to put his photography into hibernation, Hungarian photographer Tibor Litauski took an alternative route when his first child came along. Finding he had much less time during the day, he switched from shooting birds to shooting nocturnal wildlife once his son had gone to bed.

'Birds were my favourite subject,' he tells us, 'as they are so varied and interesting – every moment is a joy when you are watching them. But as we all know, photographing birds requires a lot of time.

When my son was born I had less time but still wanted to indulge my two loves – my family and photography. So I started photographing the wildlife that comes out at dusk and at night. This way I have time for everything.' When he sleeps though, he doesn't mention.

But the lack of sleep and his nocturnal adventures have paid off, as he has just won the Small World category of the Nature TTL photo contest with this fabulous long shutter picture of a moth in flight.

When most of us think of photographing motion the first thing that comes to mind will be bright light and short shutters. We've been programmed to freeze anything that moves so it will appear in the picture razor-sharp in glorious detail. That does

give an interesting result in that it crystallises the object so we can see through photography what we can't with our eyes. Tibor has combined that sharp frozen frame with something that reveals the moth's movement in a very clever way.

'There's very little natural light available in night photography, so I have to bring my own lights – in this case an LED head torch and a flash unit. It was a cloudy summer evening in August 2021. There was still a bit of light left in the sky, but not enough on its own to shoot the moths. My plan was to use the torch to light the moth in flight and then, with the flash set to second-curtain sync so it would fire at the end of the exposure, to freeze it at the end of its path. It takes a lot of luck to get a moth in the right place and in focus, so I was very pleased with this shot – it shows the path of the moth, and the flash went off just as it had its wings open wide, making it nicely symmetrical.

'When I looked at the picture on the back of my camera I thought the shot needed a bit more of the atmosphere of the scene, so I made a second longer exposure to lift the background and to set the scene.'

The knowledge

'I've been shooting moths at night for about four years and good pictures are rare. Firstly, the conditions are very challenging and it needs a lot of knowledge that doesn't just come overnight. It is also hard to show anything new in this area, but when you put in a lot of time ideas come, so I'm very proud of this picture.'

'Obviously no camera autofocus system will work in these conditions so I shoot in manual focus, in this case setting my focus distance to 35cm. I was using a Canon EF 17-40mm f/4 L USM lens on my Canon EOS 5D Mark IV and I had it set to the widest focal length to give the subjects space in which to move.'

This remarkable image reminds us there are always more than a few ways in which to show anything in photography. Everyone reading this will know what a long shutter speed is and have access to them on their camera, and many others will be familiar with second-curtain flash sync – and have access to such a mode. When though was the last time you thought to use either, and when did you last aim to get a moving object anything other than pin-sharp? We look at pictures like Tibor's and say, 'That's amazing' – and it is – but we all have the means to create the same. Just, we don't always think of it. Maybe we all need less sleep.



You can see more of Tibor's pictures on his Instagram page: www.instagram.com/tiborlitauski_naturphtgrphy, and see more about the Nature TTL competition at naturettl.com

Breath Taking

Angela Stoll talks to **Peter Dench** about the influence of dance in her photography

I doubt many of you have watched the American television docuseries *Dance Moms*? Or perhaps you glimpsed a few episodes when collecting dirty dinner plates from your children, then took more of an interest, finally sitting down next to them to watch episode after episode? It's been known to happen. The show follows the training and careers of children in dance and showbusiness under the tutelage of Abby Lee Miller profiling the relationships between Miller, the dancers, and their often over-the-top and bickering mothers.

'My life was kind of like *Dance Moms*. I've been dancing since I was three which I did competitively until the end of high school; then my social life kicked in when I turned 18 and kind of lost that passion. That competitiveness took it out of me. Was I doing it for me or to win? It's not what I wanted to do in the end,' remembers 23-year-old Angela Stoll.

Exploring movements

Having had dance in her life for so long, it was never going to disappear completely and inevitably pirouetted into her practice while studying for a Bachelor of Creative Arts (majoring in Visual Arts) at the University of Wollongong on the Pacific Ocean coast just south of Sydney, Australia. Angela draws on her experience as a dancer to explore movements through photography and hand-made textiles, using the unpredictable nature of the pinhole camera to investigate the connection between the body, memory, and clothing.

'Photography wasn't my strong point, it wasn't what I went into visual arts wanting to do. One of my lecturers showed me the pinhole approach and how to use it with a DSLR camera and an obscure pinhole lens. The reason I used the pinhole lens is it's perfect for capturing movement. I felt like if I did it with any other lens it wouldn't correlate with what I wanted to get across. I did a lot of experiments and knew what strategies I could use and what effect I wanted so I would know exactly what it would look like.'

As she entered her last year at university,

Angela applied the pinhole technique to her project, *Even When We're Breathing, We're Moving* – a finalist in the student competition at the 2022 Sony World Photography Awards. The recognition has been motivational. 'I entered for experience to see what other people thought about my work. I wasn't expecting to be shortlisted, I wanted to get familiar with the process of entering. I entered to gain confidence, for that reassurance from an international audience, for someone else to say your practice is really good.'

Improvisation

While exploring the building from where her dad runs a bicycle business, climbing the staircase, Angela discovered an abandoned bare room with monster cracks in the wall. Inspired, she could picture what she wanted to achieve within the space. 'It was during the time of lockdown and Covid-19 and I just wanted to feel connected to myself, movement and the space I was in. I went into the space and improvised, moved how I wanted to. I didn't want it to be structured, more organic. What I got I was really pleased with.' Angela danced in socks and without music. The 15-30sec exposures gave her range to move within that sequence. The black & white images are soft and subtle, delivering the movement without the distraction of colour.

'Dancing in an abandoned space allows me to freely express how I feel, developing a connection with an empty environment that has now been forgotten. Movement is a passage of time that provides a visual form of how one got from beginning to end. Exploring the relationship between time and movement through dance reveals a narrative, showcasing how the body remembers what the mind has forgotten. I wanted it to be based on movement and where movement comes from and when we're breathing, we're moving. Initially you don't think about that, breathing as an actual movement and it is related to dance in a way. When we dance the movement is instigated from breath. That's what I wanted to capture,' she says, exhaling deeply.



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Angela Stoll

Australian photographer Angela is a finalist in the Student competition of the Sony World Photography Awards 2022. You can see more of Angela's work at www.instagram.com/_herdesigns



Angela entered the Sony World Photography Awards to familiarise herself with the process of entering competitions – she was thrilled when her project was chosen as a Finalist

Spirit of place

The timber circle known as Seahenge has captivated archaeologists and historians. In a book of poetry and ICM photography, Andrew Rafferty and Kevin Crossley-Holland offer their take on the monument, as **Tracy Calder** reveals

In 1998 the shifting sands of Holme Beach in North Norfolk revealed a secret that had been hidden from view for millennia. As the sea retreated, a tight circle of 55 oak posts appeared in the intertidal zone. In the centre was an upturned tree trunk, stripped of its bark. Using dendrochronology (the scientific method of calculating dates and ages using tree rings), archaeologists traced the posts back to the Bronze Age (they were felled in 2049 BC). Like so many prehistoric monuments, the exact purpose of this circle is unclear, but its discovery excited archaeologists (and the public) enough to award it the name Seahenge.

Tough decisions

Photographer Andrew Rafferty read about Seahenge in the press and, as a keen historian, he immediately felt the need to visit the site. Standing on the beach, his senses enlivened by the brisk sea air, he was astounded by what he saw. 'I was staggered,' he recalls. 'The site delivered in every sense. Firstly, it's amazing it has survived so long, and once you get your head around that,

your imagination runs wild wondering what the heck was going on, because the central stump is a feature that hasn't been found anywhere else.'

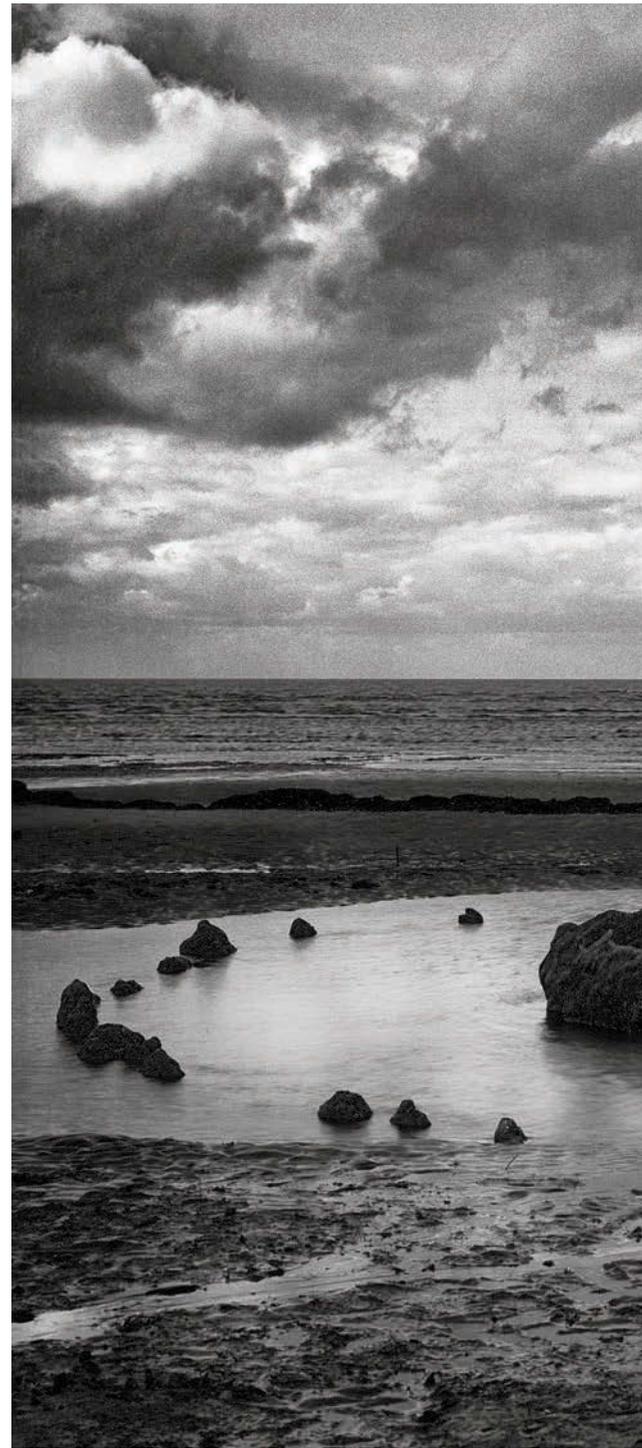
Andrew had little more than an hour to photograph the circle and is one of only a handful of people to shoot the timbers in situ. All the posts (and the inverted oak) were removed by English Heritage during the summer of 1999 – a decision that attracted some controversy. 'There were two options,' says Andrew. 'Either let it rot in situ or take it out and put it in a museum.' While part of him preferred the first option, he is quick to point out that there wouldn't be much of Seahenge remaining now if it had been left to battle the elements. 'Even stone monuments left in the open suffer weathering,' he explains. 'And then, of course, with the pollutants we have in the atmosphere, things are not getting any better.'

Stone circles and idle Romans

Seeing Andrew's face light up as he describes photographing the first (and later a second) timber circle is a joy. As someone who used to visit

Seahenge. Andrew Rafferty is one of only a few people to have photographed the intriguing prehistoric timber circle in situ

Hadrian's Wall with his father, he has a thirst for history that has been passed down and gradually expanded on. 'My dad was a very keen historian, and he would show me graffiti on the Wall left by idle Roman lads,' he laughs. 'If you know where to look you can see it.' His love of photography (and the arts in general) originates from his mother who introduced him to painting and music. 'She had a way of looking at

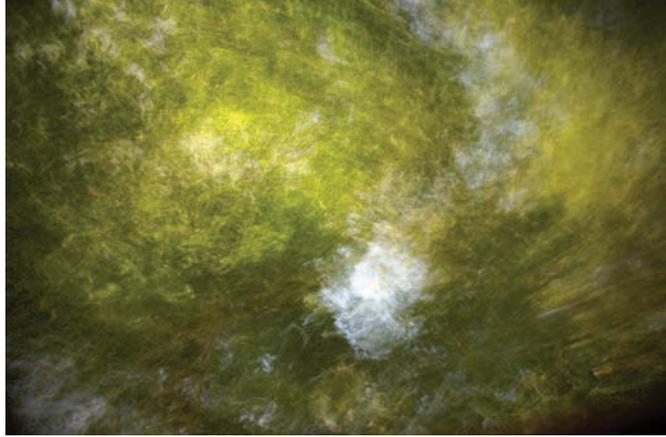




pictures and saying just a few lines to give you the right hint,' he recalls. His mother had a Kodak Brownie 127 and Andrew remembers trying to use it as a child. Eventually he and his three brothers were given their own cameras and they would put on slideshows for the family.

When his uncle died in the 1980s, Andrew was given his Leica CL by his mother. Soon after, he became interested in photographing stone

circles and ancient monuments, a passion that led to an exhibition and well-received book (*The Stones Remain*). 'I wanted the book to have real substance, so I decided to team up with a writer,' he explains. Andrew was familiar with the work of poet, novelist and translator Kevin Crossley-Holland (who often writes about myths and legends) and so he approached him with a view to teaming up. 'He agreed, but it



Always Tree

Canon EOS R5, 17-35mm, 3.2sec at f/4, ISO 400



Chilterns

Canon EOS 5D Mark II, 17-35mm, 1sec at f/11, ISO 400



Forest Walk

Canon EOS 5D Mark II, 24-70mm, 1.6sec at f/3.2, ISO 400



Stream

Canon EOS 5D Mark II, 24-70mm, 0.8sec at f/4, ISO 400



took him a long time to get the text ready,' laughs Andrew. 'The book didn't get published until 1989 [four years after the idea was originally discussed].'

Time to think again

Despite the delay, the book proved popular with both the press and the public and over the years the friends often discussed reissuing it. When Seahenge was discovered, it reignited their enthusiasm for the project. 'We both thought that a photograph of this Neolithic timber circle would be a good addition to a revised publication of *The Stones Remain*,' recalls Andrew. With the photograph 'in the bag', Kevin was tasked with writing a new poem to go alongside it. However, once the poem was finished, it was too long to fit in the book. Undeterred, the resourceful creatives decided to produce a brand-new book with a fresh selection of images. The result, *Seahenge: A Journey*, couldn't have been more different from the original plan.

Equipment

For the bulk of the Seahenge project Andrew used a Canon EOS 5D Mark II and Canon EOS R5 with Canon EF 17-35mm f/2.8 L and Canon EF 24-70mm f/2.8 L lenses, as well as a 100-400mm f/4.5-5.6 a little less frequently. On occasion he also used a Leica M Monochrom. A B+W ND 3.0 (filter factor 1000x) was also required for many of the images.

Kevin's poem takes the reader on a journey along the ancient trackways of the Ridgeway, Icknield Way and Peddars Way, concluding at the original site of Seahenge. Having read his co-creator's text over and over, Andrew decided to shoot in black & white, producing images similar to those in *The Stones Remain*. 'As the poem was originally for the first book, I reverted to my photography type,' he admits. 'But when I started putting the pictures with the poetry it didn't work!' At this point, Andrew had to be honest with himself and decide whether to pursue his first idea or adopt a new approach. He chose the latter. 'It took me a while to come to the decision, because I had to be brave and rethink everything,' he explains.

Colour and movement

With a totally open mind, Andrew revisited the poems and was soon struck by a number of things: firstly, the words were full of colour and, secondly, they were full of movement. 'In one poem, for example, Kevin wrote, "the bristling fields copper and bronze",' recalls Andrew. 'If you try to put that against a static black & white photograph it doesn't work.' So, having decided to shoot in colour, Andrew needed to come up with a way of injecting some movement into the work. The answer came in the form of ICM (Intentional Camera Movement). 'Over the years we have probably all experimented with moving the camera while the shutter is open,' says Andrew, 'but digital has made this technique

Above: Fen
Canon EOS 5D Mark II,
17-35mm, 1sec at f/5.6,
ISO 400

much more accessible, because you can see the results instantly.' Andrew had a feeling this way of working would give his images the sense of energy and movement he desired.

Kevin was on board with Andrew's decision to shoot the book using ICM. By now the two were firm friends, and their roles in the project were clearly defined. 'When I collaborate with a poet or a writer, I'm not trying to illustrate their words, and their words aren't trying to illustrate my images,' stresses Andrew. 'There are two journeys – the poetic journey and the photographic journey. They each have to stand on their own merit, but there should be a close co-existence between them, which has the capacity to enrich the experience for the reader.' As Andrew was creating his images, Kevin's words were constantly running through his head, subtly influencing his actions.

Trial and error

The landscape itself also dictated how Andrew moved and behaved. When practising ICM, the tendency is to pan the camera up and down or

Below: Flight
Canon EOS 5D Mark II,
100-400mm, 1/4sec at
f/29, ISO 50





Seahenge: A Journey is available as an enhanced Apple iBook (with poems narrated by Kevin Crossley-Holland) from Apple Bookstore. To see more of Andrew's work, visit andrewrafferty.co.uk

long to keep the shutter open. To stay true to the spirit of photography, he decided to record all the movement in a single frame (rather than layering exposures during post-production). Starting with exposure times of around five seconds, which resulted in over-exposure or indiscernible details, he soon reined things in and settled on speeds between 1/6sec and two seconds. 'What I was trying to do was create the impression of movement, while still giving the viewer something they can latch on to,' he explains. 'You've got to give people an anchor – if you take away all of the reference points the reader might give up because they don't know what's going on.'

The right impression

Andrew's knowledge of painting – particularly the work of the Impressionists – came in handy while he was working on the Seahenge project. 'When I first went to the National Gallery in London many years ago, I headed straight for the Impressionists art collection,' he says with a smile. 'I guess some of that has stayed with me, because there is definitely something impressionistic about the Seahenge images.' Looking at his considered use of light, and beautiful blending of colours and shapes, I'm inclined to agree. 'It's not about picking out fine detail, it's about an impression of the landscape,' Andrew concludes. 'If you look at a Cezanne or a Monet they don't paint the detail; they give you the feel of a place. That's what I was trying to achieve; not the place, but the spirit of the place.'

AP



Murmur Canon EOS 5D Mark II, 24-70mm, 0.6sec at f/2.8, ISO 200

left and right, but Andrew had other ideas. A shot of the sky, for example, required him to rotate the camera 360° while an image of a winding stream required him to move the camera in an S-shape. Similarly, when he stumbled across a line of fenland grasses, he followed the diagonals up with his camera. 'You have to work with the landscape and not against it,' he advises. 'Whatever the landscape is doing, you're trying to tease it out just a little bit more.'

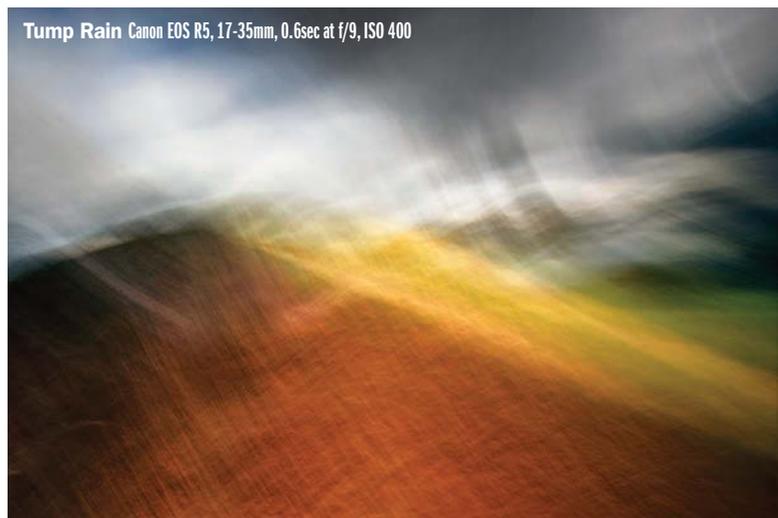
Naturally, ICM involves a fair amount of trial and error and sometimes things didn't work out exactly as Andrew planned. But he accepted the failures with good grace and embraced the happy accidents. 'Sometimes you think, "well I don't know what I was doing there, but I'll have it anyway",' he laughs.

One of the greatest challenges Andrew faced was determining how



Tides Leica M Monochrom, 28mm, 0.7sec at f/22, ISO 400

Tump Rain Canon EOS R5, 17-35mm, 0.6sec at f/9, ISO 400



Sharp shooters

Jon Stapley and Andy Westlake round up the best cameras for shooting sports and action, catering to every budget

The best cameras for action photography need to be able to capture fast, fleeting moments in pin-sharp detail. This means that we're looking for a number of key features – most obviously robust burst shooting, with plenty of frames per second and a deep buffer so you can keep going for a few seconds to ensure the moment isn't missed. A good sports camera should also have a

fast, accurate autofocus system that can keep up with tricky moving subjects, even as they flit in and out of frame. Here, the latest AI-based subject-recognition autofocus systems can pay dividends. Good high-ISO performance is a plus too, as this will allow you to use shorter shutter speeds, bettering your chances of freezing the action.

It's not just about features, though. The camera also needs to handle well and let you

change settings quickly – there's no point in having sophisticated autofocus if it's impossible to set up quickly. For shooting sports, you'll probably want a decent degree of weather-sealing, too. We've put together this guide to help you find the best cameras for sports and action across the price spectrum, starting out with budget-friendly models for beginners, and moving up to the top-of-the-line professional options.

Olympus Tough TG-6

- £399
- www.olympus.co.uk

At a glance

- 12MP 1/2.3in type sensor
- 25-100mm equivalent f/2-4.5 lens
- Contrast detect autofocus
- 20fps shooting
- ISO 100-12,800
- 4K 30p video recording
- No viewfinder
- 3in fixed screen

This probably isn't the first camera that would spring to mind as being ideal for sports and action. Its built-in lens tops out at 100mm equivalent, it doesn't have a viewfinder, its screen is fixed rather than tilting, and it relies on contrast detect AF. But it wins its place in this list thanks to its very specific superpower – quite simply, it's the best tough camera you can buy.

This is, in fact, a camera that you can put through almost any abuse and it'll survive to tell the tale. It's waterproof to 15m depth, shockproof to a fall from a 2.4m height, crushproof to a force of 100kg, and dustproof. And whatever the limitations of

its small 12MP sensor, it'll deliver better images than any action camera is likely to manage, not least because it can shoot in raw.

It's also quick, being capable of shooting at 20 frames per second. It even boasts Olympus's Pro capture mode, which means it can continuously shoot and buffer images at 10fps for half a second before the shutter button is fully depressed. This is great for capturing unpredictable moments where you wouldn't otherwise have time to react.



Pros and cons

- + Incredibly tough
- + Fast continuous shooting
- + Pro capture mode
- Short zoom lens

Sony Alpha 6000

- £429 body-only
- www.sony.co.uk

At a glance

- 24.3MP APS-C sensor
- Sony E mount
- 179-point autofocus
- 11fps shooting
- ISO 100-25,600
- Full HD 60p video recording
- 1.44m-dot viewfinder
- 3in tilting screen

Although it's an old model now, dating from 2014, the Sony A6000 is still a solid choice for prospective sports and action shooters on a budget. You can pick one up for less than £500 with a starter kit lens, and it often dips below £350 body-only in seasonal sales, which makes it one of the savviest buys on the market. Lightweight and speedy, this E-mount mirrorless camera performed well in our tests in all manner of shooting conditions.

Sony first deployed here a hybrid autofocus system which came very close to matching contemporary DSLRs. The AF would be refined in subsequent A6000-series cameras, but Sony got a lot right the first time, and

the A6000 is pretty dependable even with moving subjects. Having 11fps shooting is handy too, and means you're unlikely to miss the moment – or at least if you do, it won't be the camera's fault!

There's also a good range of E-mount lenses to choose from.

In terms of design, the A6000 now looks rather dated, with an awkward control layout and a low-resolution viewfinder. It also lacks 4K video recording. But if you want small, fast and cheap, it's difficult to beat.



Pros and cons

- + Cheap, and getting cheaper
- + Capable autofocus system
- + Lightweight and portable
- Outdated design

Fujifilm X-T30 II

- £799 body-only
- www.fujifilm.com/uk/en

At a glance

- 26.1MP X-Trans IV APS-C sensor
- Fujifilm X mount
- 117 or 425-point autofocus
- 20fps shooting (30fps cropped)
- ISO 80-51,200 (extended)
- 4K 30p video recording
- 2.36m-dot viewfinder
- 3in tilting screen

An update to one of Fujifilm's most popular cameras, both critically and commercially, the Fujifilm X-T30 II is an outstanding APS-C mirrorless shooter that makes for an exceptional starter sports camera. It's capable of shooting at up to 20fps in 26.1MP full resolution using its electronic shutter, and can stretch to a maximum burst speed of 30fps in a cropped shooting mode. The generous ISO range of 80-51,200 gives you a good deal of flexibility, and the autofocus system is capable of tracking moving subjects across the entire frame.

As we noted in our review, Fujifilm has priced this camera very competitively, considering

how well-specified it is. The RRP is £769 body-only, and for that you get the same sensor as featured in the high-end X-T4. Fujifilm X cameras are great fun to use, with satisfying dial-based controls, and give fantastic JPEG output, which means you don't necessarily need to clog up your memory card with large bursts of raw images. Another serious advantage is the extensive X-mount lens range, which is a fantastic series of pin-sharp optics, perfect for freezing action. This includes an array of telephoto zooms to suit every budget.



Pros and cons

- + Excellent out-of-camera JPEGs
- + Satisfying physical handling
- + Superb lens range
- No in-body stabilisation

Nikon CoolPix P950

- £849
- www.nikon.co.uk

At a glance

- 16MP 1/2.3in type sensor
- 24-2000mm (equiv.) f/2.8-6.5 lens
- Contrast detect autofocus
- 15fps shooting
- ISO 100-6400
- 4K 30p video recording
- 2.36m-dot viewfinder
- 3in fully articulated screen

A superzoom bridge camera gives you more zooming power for your buck than pretty much anything else on the market. The Nikon CoolPix P950 boasts a whopping upper optical zoom range of 2000mm equivalent; close enough to make out the individual follicles on a football player's head, if that's something you want to do. It can also shoot 16MP stills at 15 frames per second. Yet this comes in a camera the size of an enthusiast DSLR that weighs just a shade over a kilogram.

Getting the equivalent zoom range in a mirrorless or DSLR system would likely run you into a five-figure price tag, so the Nikon

CoolPix P950 certainly offers value for money. You just need to be aware of its limitations; namely, the 1/2.3-inch sensor size, which has a notable impact on image quality, especially in low light. Its reliance on contrast detection autofocus also places it at a disadvantage compared to other cameras in this round-up. But, of course, none of those can match its sheer telephoto reach.

If this model is out of your budget then it's worth looking at its predecessor, the CoolPix P900, which can generally be picked up second-hand for £499 or less.



Pros and cons

- + Vast optical zoom range
- + Impressive portability
- + Raw format support
- Small sensor impacts image quality

Panasonic Lumix G9

- £899 body-only
- www.panasonic.com/uk/

At a glance

- 20.3MP Four Thirds sensor
- Micro Four Thirds mount
- 225-point autofocus
- 60fps shooting
- ISO 100-25,600 (extended)
- 4K 60p video recording
- 3.68m-dot viewfinder
- 3in fully articulated screen

Weather-sealed, the Panasonic Lumix G9 is a sports camera for those who want to be ready for anything. If you want to shoot pickup basketball games in New York City, muddy motorsport races on torrential days at Brands Hatch, beach volleyball tournaments on Australian beaches, or whatever else, the Lumix G9 will be a fantastic companion. We took the Lumix G9 out for a full field test to a remote subantarctic island, and were greatly impressed by how well it performed in challenging conditions.

It's well supported by the extensive Micro Four Thirds lens range, which gives you absolutely loads of choice, and the

significant crop factor of the MFT sensor means that you can get serious telephoto reach for a lower price and weight than you'd pay if shooting with a bigger sensor. The Panasonic Leica DG 100-400mm f/4-6.3 OIS, for example, gives an 800mm equivalent range, but weighs less than 1kg and costs £1,150 new, and less than £900 second-hand. The electronic viewfinder is also a big feather in the G9's cap, too – with a massive magnification of 0.83x, it immerses you right in the middle of the action.



Pros and cons

- + Extensive weather-sealing
- + Comprehensive lens range
- + Superb electronic viewfinder
- Quite heavy for MFT

Nikon D7500

- £1,049 body-only
- www.nikon.co.uk

At a glance

- 20.9MP APS-C sensor
- Nikon F lens mount
- 51-point autofocus
- 8fps continuous shooting
- ISO 50-1,640,000 (extended)
- 4K 30p video
- Optical viewfinder, 0.63x
- 3.2in tilting screen

Aimed squarely at enthusiast photographers, the D7500 borrowed its 20.9MP DX format sensor from the pro-level D500. This means that you get great noise control within the native sensitivity range of ISO 100-51,200, but only fractionally less detail resolution than its 24MP or 26MP peers. As it uses the long-running Nikon F lens mount, there's a huge range of lenses available both new and second-hand, including plenty of long telephotos.

For viewfinder shooting you get a 51-point AF system, with 15-cross-type points, which is very fast and accurate. It includes a Dynamic-area AF option which can be set to use multiple AF

points for tracking the subject. The 9-point option is probably the most reliable, but larger groups can come in handy too. But don't even think about switching to live view for shooting action via the LCD, as the camera switches to a vastly inferior contrast-detect AF system.

The D7500 employs a carbon fibre monocoque construction that helps to keep its weight down, but it's still fairly robust and weather-sealed to keep out dust and moisture. It handles every bit as well as we'd expect from a Nikon DSLR, so you can quickly change settings to deal with different situations.



Pros and cons

- + Impressive high-ISO quality
- + Superb autofocus
- + Huge lens range available
- Poor live view AF

Canon EOS 90D

- £1,299 body-only
- www.canon.co.uk

At a glance

- 32.5MP APS-C CMOS sensor
- Canon EF / EF-S lens mount
- 45-point autofocus
- 10fps shooting
- ISO 100-51,200 (extended)
- 4K 30p video recording
- Optical viewfinder, 0.59x
- 3in fully articulated screen

There's a lot to be said for a good old DSLR in the hand. With its chunky handgrip and optical viewfinder, the Canon EOS 90D provides a slightly old-fashioned but sublime shooting experience. It's heavier than its mirrorless contemporaries, but eminently satisfying to use. It's the most recent enthusiast DSLR Canon has released, and quite possibly the last one we'll ever see. If that turns out to be the case, it's certainly a high note to go out on.

Using the viewfinder, you get 45 autofocus points clustered closely together towards the middle of the frame. This works well, just as long as you can keep the subject centred. The live view

AF system is unusually capable for a DSLR, with subject tracking across the frame thanks to Canon's Dual Pixel AF. We found the 32.5MP sensor produces exceptional images, with enough detail that you can crop in if you didn't get as close as you'd like.

While it's not got a perfect feature-set for sports – lacking a second card slot, for instance – the EOS 90D has a lot going for it, such as the large LP-E6N battery, with which you can keep shooting all day. It also brings access to a vast range of EF-mount lenses, both from Canon and third-party makers.



Pros and cons

- + Excellent resolving power
- + Superb ergonomics
- + 1,300-shot battery life
- Only one card slot

Canon EOS R7

- £1,349 body-only
- www.canon.co.uk

At a glance

- 32.5MP APS-C sensor
- Canon RF lens mount
- 5,915-point autofocus
- 30fps shooting
- ISO 100-51,200 (extended)
- 4K 30p video
- 2.36m-dot viewfinder
- 3in fully articulated screen

Canon's latest APS-C model uses a similar 32.5MP sensor to the EOS 90D but places it behind the mirrorless RF mount. The practical benefit for action shooters is that you get faster shooting and more sophisticated autofocus in a smaller and lighter body. This includes subject recognition AF borrowed from the high-end full-frame EOS R3, which works with animals, humans and vehicles.

The EOS R7 also offers super-speedy shooting, at 15fps with the mechanical shutter, or 30fps with the silent electronic shutter. Just like the EOS 90D, the high-resolution sensor and 1.6x crop factor records plenty of detail with distant subjects.

Canon DSLR users should find its handling and operation generally familiar, although the combined rear dial/joystick might take some getting used to.

While there are only a few RF-mount APS-C standard zooms initially available, sports and action shooters who don't want to lug around hefty kit should be delighted by the lightweight RF 100-400mm F5.6-8 IS USM or the surprisingly lightweight RF 600mm and 800mm F11 primes. The EOS R7 also works well with EF-mount DSLR lenses via a mount adapter.



Pros and cons

- + Sophisticated autofocus
- + Rapid shooting
- + Small and light
- Limited matched lens range

Sony RX10 IV

- £1,499
- www.sony.co.uk

At a glance

- 20.1MP 1.0-in type sensor
- 24-600mm (equiv.) f/2.4-4 lens
- 315-point autofocus
- 24fps shooting
- ISO 64-25,600 (extended)
- 4K 30p video
- 2.36m-dot viewfinder
- 3in tilting screen

Sony's RX10 IV can't match the Nikon P950 for outright zoom range, with its integrated lens topping out at a 600mm equivalent setting. But it wins out in terms of image quality, thanks to its larger 1-inch type sensor. It can shoot even more quickly too, being capable of an impressive 24 frames per second in full-resolution 20MP raw. This is quicker than any DSLR and only surpassed by the latest super-fast mirrorless models.

Perhaps its most attractive feature for those shooting high-speed action is the extremely capable autofocus system. This employs 315 AF points covering 65% of the image sensor and it combines both

phase and contrast detection for both speed and accuracy. It does a great job of getting moving subjects sharp, and what's more, it can keep them focused during long high-speed bursts.

In addition, for composing your images there's a 2.36m-dot OLED viewfinder that provides a respectable 0.7x magnification, plus a 3in 1.44m-dot tilting screen. There's also a comprehensive range of external manual controls on offer, which makes this model a great choice for enthusiast photographers. As all-in-one cameras go, it's the best that you can get.



Pros and cons

- + Impressive zoom range
- + Highly capable autofocus
- + Fast shooting
- Pricey

Pentax K-3 Mark III

- £1,899 body-only
- www.ricoh-imaging.eu/uk_en

At a glance

- 25.7MP APS-C CMOS sensor
- Pentax KAF2 mount
- 101-point autofocus
- 12fps shooting
- ISO 100-1,600,000 (extended)
- 4K 30p video
- Optical viewfinder, 0.7x
- 3in fixed screen

In many ways, the K-3 Mark III is the most advanced APS-C DSLR available, with a number of features which make it a fine choice for anyone shooting sports or action. It offers a rapid 12 frames per second shooting, complete with continuous AF. The 101-point autofocus system includes 41 user-selectable points, with the remainder used to help track moving subjects. Meanwhile the 25.7MP sensor delivers plenty of detail and gives good results at high ISO settings up to ISO 51,200.

In typical Pentax fashion, you get a rugged, weather-proofed body with lots of external controls. Notably, it boasts the

largest optical viewfinder you'll find on an APS-C DSLR. This reflects the fact that it's very much a camera for viewfinder shooting – in live view, the autofocus is disappointingly mediocre.

The K-3 Mark III is compatible with a huge array of K-mount lenses, including the largest range designed specifically for APS-C DSLRs. Unfortunately, few third-party long telephotos are available new, although they can still be found on the used market. Even so, for Pentax fans looking for the quickest, most agile camera, it's a great choice.



Pros and cons

- + Rugged design
- + Lovely viewfinder
- + Fine image quality
- Poor live view

OM System OM-1

- £1,999 body-only
- www.olympus.co.uk

At a glance

- 20.4MP Four Thirds sensor
- Micro Four Thirds mount
- 1,053-point autofocus
- 50fps shooting with C-AF
- ISO 80-102,400 (extended)
- 4K 60p video recording
- 5.76m-dot viewfinder
- 3in fully articulated screen

The 'Olympus' OM-1 is simultaneously a first and a last. It's the first camera out of the gate since the sale of Olympus' imaging division to OM Digital Solutions, and the last that will bear the Olympus branding. As such, in its name it pays tribute to the original Olympus OM-1 film SLR – and it's a worthy tribute indeed.

This is a really impressive camera for the price. It can manage 120fps burst shooting with focus locked, putting it almost on a par with the Nikon Z 9, which costs more than double the price. Knock that rate down to a still-impressive 50fps and you get continuous autofocus including AI subject detection, as

well as blackout-free shooting.

There are loads of other features we highlighted in our glowing review as well, like the extensive weather-sealing, the 1,053-point autofocus system, and the clever Pro Capture mode that can capture up to 70 shots before you fully press the shutter release button. Granted, the 20MP Four Thirds sensor may not be sufficient for some users. But if you can live with it, there's a fine camera here, with a wide range of Micro Four Thirds lenses available from both OM System/ Olympus and Panasonic.



Pros and cons

- + Seriously fast burst shooting
- + IP53 weather-sealing
- + Exceptional stabilisation
- 20MP MFT sensor may not be enough

Fujifilm X-H2S

- £2,499
- www.fujifilm.com/uk

At a glance

- 26.2MP APS-C sensor
- Fujifilm X lens mount
- 425-point autofocus
- 40fps shooting
- ISO 80-51,200 (extended)
- 6K 30p video
- 5.76m-dot viewfinder
- 3in fully articulated screen

Fujifilm's speedy X-system flagship is an enticing option for those who'd like a top-performing action shooter with all the latest technology, but in a more affordable alternative to top-end full-frame cameras. It combines blistering speed with portability, with its 26.2MP APS-C stacked CMOS sensor enabling silent shooting at 40 frames per second for up to 140 frames, complete with AF. Dial down to 15fps, and the camera can keep going almost indefinitely. You also get subject-detection autofocus, which is capable of recognising most types of vehicle along with animals and birds.

While most of Fujifilm's other cameras use analogue dials, the

X-H2S takes a different line, with a highly customisable electronic interface. This allows users to configure up to six custom shooting set-ups for different scenarios and recall them using the mode dial. Naturally, the body is extensively weather-sealed for outdoor shooting, as are most of the firm's XF lenses. Thanks to the 1.5x 'crop factor' of the APS-C sensor, you get impressive telephoto reach with reasonably portable lenses, with the latest XF150-600mm F5.6-8 lens providing an amazing 900mm equivalent range.



Pros and cons

- + Seriously quick shooting
- + Excellent AF
- + Rugged build
- Pricy for APS-C

Sony Alpha 9 II

- £4,199 body-only
- www.sony.co.uk

At a glance

- 24MP full-frame sensor
- Sony E-mount
- 693-point autofocus
- 20fps shooting
- ISO 50-204,800 (extended)
- 4K 30p video recording
- 3.68m-dot viewfinder
- 3in tilting screen

Purpose-made for the working professional sports photographer, the Sony A9 II packs in loads of features that might not make much sense to an enthusiast, but a pro will be extremely thankful for. The ability to voice-tag images, for instance, is something that can save a huge amount of time when sending images to news desks, while the fast transfers through the ethernet port make this entire process more seamless than ever before.

Of course, none of this would matter if the A9 II didn't have shooting chops, but we can affirm that it has truly got it where it counts. The 20fps continuous

shooting is enough to capture pretty much anything, while the autofocus is outstanding, particularly the Eye AF. It can also focus in conditions as dim as -3EV, which makes the A9 II a particularly good low-light choice. All this technology comes in a smaller, lighter body than conventional pro-spec sports DSLRs.

You'll also find there's a wide range of E-mount lenses available, and while you'll get the fastest speeds with Sony's own lenses, there are plenty of third-party options too. Its main weakness compared to the latest cameras is the lack of support for speedy CFexpress cards.



Pros and cons

- + Superb autofocus
- + Strong lens range
- + Pro-spec connectivity
- No CFexpress support

Nikon Z 9

- £5,299 body-only
- www.nikon.co.uk

At a glance

- 45.7MP full-frame sensor
- Nikon Z mount
- 20fps shooting (30fps JPEG-only)
- 493-point autofocus
- ISO 32-102,400 (extended)
- 8K 30p video
- 3.69m-dot viewfinder
- 3.2in, 3-way tilting screen

Nikon's flagship mirrorless camera is probably the most advanced continuous shooting camera on the market right now. Using the full resolution of its 45.7MP full-frame sensor, it can capture images at up to 20fps in raw format, or 30fps if you're happy to shoot JPEG only. That's more than respectable. Drop the resolution down to 11MP however, and you can bump this frame rate up to an absolutely incredible 120fps.

Pair this phenomenal speed with a ground-breaking AI-powered autofocus system that can recognise multiple subject types simultaneously – humans, animals and vehicles – and it starts to become clear why the

Z 9 is hailed as one of the finest sports cameras ever made. It should easily keep up with pretty much anything you can throw at it. Naturally, though, all this tech doesn't come cheap. You'll also need advanced CFexpress Type B memory cards to take advantage of those speeds, which bumps the cost up still further.

There's little point in spending the money on the Nikon Z 9 unless you're going to be exploiting its pro-level features, but if you are, it'll blow you away. There's a good range of Z-mount lenses now available, too, including a good range of top-notch telephotos.



Pros and cons

- + Class-leading burst shooting
- + AI subject-detection autofocus
- + Pro-quality handling
- Big and heavy

Canon EOS R3

- £5,879 body only
- www.canon.co.uk

At a glance

- 24.1MP full-frame sensor
- Canon RF lens mount
- 30fps shooting
- 1,053-point autofocus
- ISO 50-204,800 (extended)
- 6K 60p video
- 5.76m-dot viewfinder
- 3.2in fully articulated screen

Canon's flagship mirrorless camera notionally sits just below the flagship EOS-1D X Mark III pro DSLR in the company's line-up. But in reality, it's by far the most advanced camera the firm has ever made, with an inspired combination of advanced technologies making it one of the best cameras around for shooting fast-paced, unpredictable action.

Firstly, it includes subject detection autofocus that can recognise humans, animals and vehicles, and focus on the most important part. Secondly, it employs Canon's unique eye control focus, which means that if there are multiple possible subjects in the frame, you can select one simply by looking at in

the viewfinder. This works brilliantly, leaving you free to concentrate on the composition and timing of your shots.

Of course, the EOS R3 is a proper pro-spec camera. Its robust, weather-sealed body has an integrated vertical grip with a duplicate set of controls for portrait-format shooting. It's capable of shooting at a pacey 30fps when the electronic shutter is in use, or 12fps with the mechanical shutter. Both are with full autofocus and metering. Its only slight drawback compared to its Nikon and Sony rivals is its resolution of 'just' 24MP, which gives less scope for cropping.



Pros and cons

- + Eye control focus
- + AI subject detection
- + Rapid shooting
- 24MP resolution

Sony Alpha 1

- £6,499 body-only
- www.sony.co.uk

At a glance

- 51MP full-frame sensor
- Sony E mount
- 30fps shooting
- 759-point autofocus
- ISO 50-102,400 (extended)
- 8K 30p video
- 9.44m-dot viewfinder
- 3in tilting screen

This is the camera that does everything. The Sony A1 is the camera that proves you don't have to choose between speed and resolution. If you've got the cash – and make no mistake, it's a lot of cash – then the Sony A1 will shoot incredibly detailed 50MP images at a rate of 30fps, with autofocus adjustments in between shots, somehow. If you need to record video, too, it's capable of shooting in 8K at 30fps, or 4K at 120fps.

All this is backed by the at-times preternatural-seeming autofocus system, which makes capturing fast-moving subjects a matter of near-trivial ease – in our review, we described it as 'so

easy that it feels like cheating'.

There's also the stacked sensor design that eliminates the image distortion problems that can affect electronic shutters. The compact body houses a sensationally detailed 9.44m-dot viewfinder with a huge 0.9x magnification. Plus, it uses the E-mount lens range, which is far and away the most extensive glass catalogue for a full-frame mirrorless system.

This is the new frontier of what camera tech is capable of, and it's difficult to think of a shooting scenario in which the Sony A1 would not utterly excel.



Pros and cons

- + Full-resolution 30fps with AF
- + Exceptionally good viewfinder
- + 8K video
- Hard to operate with gloves

Canon EOS-1D X Mark III

- £6,999 body-only
- www.canon.co.uk

At a glance

- 20.1MP full-frame sensor
- Canon EF mount
- 191-point autofocus
- 20fps shooting
- ISO 50-819,200 (extended)
- 4K 60p video recording
- Optical viewfinder, 0.76x
- 3.2in fixed screen

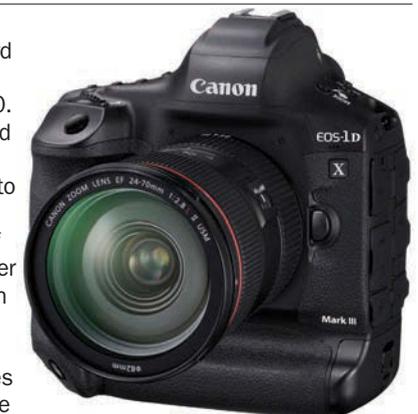
Sure, it's been pretty much superseded by the high-tech wizardry of the mirrorless Canon EOS R3. But we couldn't resist including the Canon EOS-1D X Mark III, as it's set to go down in history as one of the last great sports DSLRs, alongside the Nikon D6.

This is an absolutely excellent camera for action photography, with a 191-point autofocus system for viewfinder shooting, and Canon's Dual Pixel AF in Live View, both of which can track moving subjects with uncanny precision. You also get a 16fps burst speed, increasing to 20fps in live view, with an effectively unlimited buffer. For shooting fast action in low light, the 20MP

sensor offers a top standard sensitivity of ISO 102,400, expandable to ISO 819,200. The massive battery is rated to deliver 2,850 shots per charge, so you're not likely to run out of juice in a hurry.

The immense pedigree of EF lenses means you'll never be short of glass – although you may find that new ones are in short supply in years to come as Canon continues to divert its resources to the EOS R system.

Still, let's not get carried away – you could shoot sports for the rest of your life on the EOS-1D X Mark III, and never feel as though you were getting a raw deal. It's an incredible camera.



Pros and cons

- + Futuristic deep-learning autofocus
- + Excellent high-ISO performance
- + Unmatched DSLR handling
- Not where the future's going

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Round ten Action

One of the biggest challenges in photography is capturing movement, whether that's freezing the action unfolding in front of you with fast shutter speeds or flash, or creating an implied sense of movement with long exposures or camera panning. There are a whole host of potential subjects on offer – we'd like to see your creative interpretations of movement, whether it's people on the go, animals in motion, the dynamism of sports, or trains, planes and automobiles.



Your guest judge

Your guest judge for Round Ten, Action, is Will Cheung, who is a regular competition judge and exhibition selector. Earlier this year, he selected for the Edinburgh International Print Exhibition and has been a selector for the Trierenberg Super Circuit on several occasions. He is Fellow of the Royal Photographic Society and is currently a member of the Travel distinctions panel. See more at www.williamcheung.co.uk

Plan your APOY year

Below is a list of all this year's rounds, including when they open, when they close and the dates the results will be announced in AP

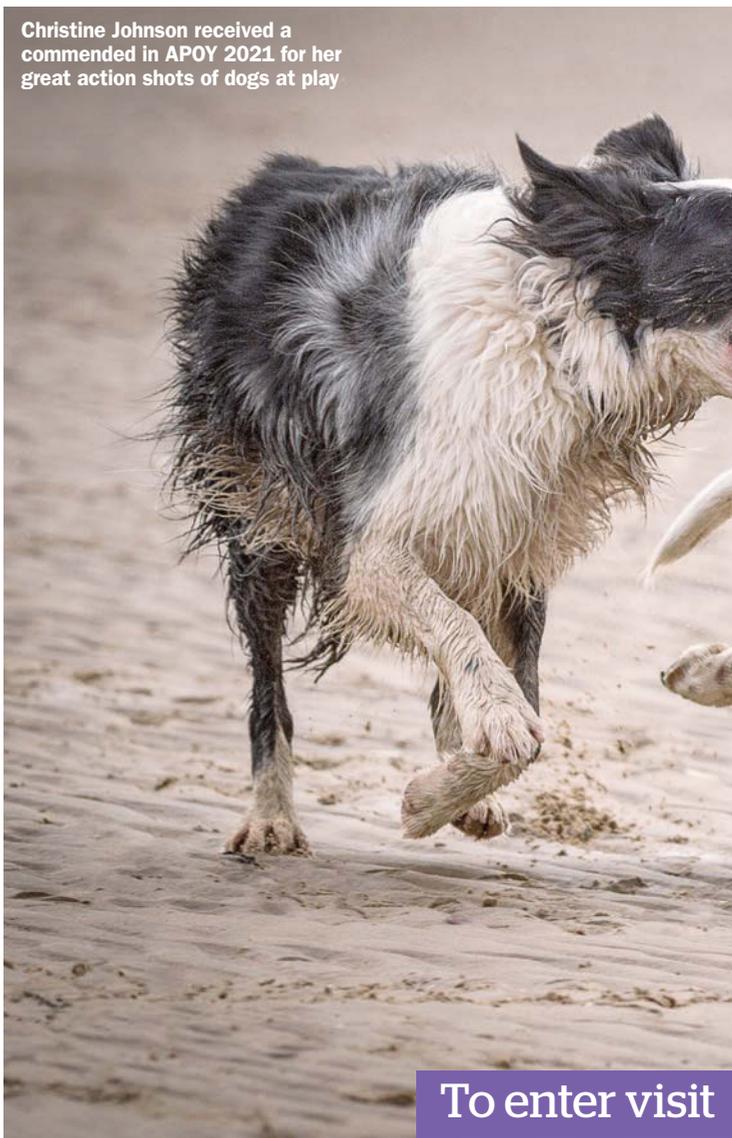
THEME	OPENS PHOTOCROWD	OPENS AP	CLOSES	RESULTS
Low light	08 Feb	15 Feb	04 Mar	AP 12 April
Black & white	05 Mar	15 Mar	25 Mar	AP 10 May
Travel	26 Mar	12 Apr	22 Apr	AP 7 Jun
Landscapes	23 Apr	10 May	20 May	AP 5 Jul
Best of British	21 May	7 Jun	17 Jun	AP 2 Aug
Close-ups	18 Jun	5 Jul	15 Jul	AP 30 Aug
People	16 Jul	2 Aug	12 Aug	27 Sep
Wildlife	13 Aug	30 Aug	09 Sep	25 Oct
Street	10 Sep	27 Sep	07 Oct	22 Nov
Sport & Action	08 Oct	25 Oct	04 Nov	20 Dec

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Enter the code below via Photocrowd to get one free entry to Round Ten - Action

APOY86363410

Christine Johnson received a commended in APOY 2021 for her great action shots of dogs at play



To enter visit

ALL ABOUT APOY 2022

The camera club award

Do you belong to a camera club? You can accumulate points for your society when you enter APOY, and after all the ten rounds are complete, the one with the most points will win a voucher for £500 to spend at MPB. The club might want to spend it on gear for use by members, or even run its own in-house competition with the prize going to the most successful photographer. It's entirely up to the winning group to decide.



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www.amateurphotographer.co.uk/apoy2022



The Young POTY award

For the second time, we are adding a Young Photographer of the Year category to APOY, in order to encourage our up-and-coming snappers. Entrants should be 21 years old or younger by the competition's final closing date of 4 November 2022. All the categories are the same as for the main competition – simply select the Young APOY option on Photocrowd when you upload your images. This category is free to enter; each category winner receives a £250 voucher, and the overall winner receives a voucher for £500 to spend at MPB.

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What you win

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The winner of each round of APOY 2022 receives a £500 voucher to spend on anything at MPB.

The Canon EOS-1D X Mark II is designed for demanding action shooting. Capable of 14fps shooting, or 16fps in live view, its 61-point AF system includes 41 cross-type points for accuracy; while Canon's Dual Pixel AF allows focusing in live view and movie mode. It can be found at MPB for between £1,129 and £1,949.

The Sigma 70-200mm f/2.8 DG OS HSM SPORT is Sigma's flagship telephoto zoom in its Sport series. It's weather-sealed and well suited to everything from touchline sports and telephoto landscapes to candid portraits at events. Our reviewer described it as 'a solid and robust performer at great value'. Find it at MPB for £1,099 in like-new condition.

The Nikon AF-S DX Nikkor 55-300mm f/4.5-5.6 G VR lens features the Vibration Reduction II stabilisation system, and a Silent Wave Motor for fast, quiet autofocus. It's weather-sealed, too, and can be purchased at MPB for between £54 and £208, depending on condition.

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Reader Portfolio

Spotlight on readers' excellent images and how they captured them



Simon White, Honiton



About Simon

Simon is a truck driver from Devon.

Favourite subjects

I've always been a massive film buff and classic American car fan, so I try to photograph subjects that have a mid-century cinematic feel.

How did you get into photography?

After seeing some of Patrick Joust's images. His atmospheric night shots of Baltimore are stunning. I bought a Panasonic bridge camera to take on a road trip through the USA in 2017 and that's where it started for me.

What do you love about photography?

Everything! From composing the shot to the final edit.

First camera

Panasonic bridge camera.

Current kit

Lumix G9.

Favourite lens

Sigma 30mm f/1.4.

Favourite accessory

My Peak Design camera clip. Much more secure than having expensive camera kit swinging around on a strap.

Dream purchase

The Sony A7 is very tempting.

What software do you use?

Luminar 4.

Favourite tips

Start with composition. It's incredibly important, and you don't need expensive kit to practise it.

Where do you find inspiration?

Growing up in the 1970s, long before the internet or the Xbox, my main source of entertainment was movies – either at my local Odeon or on one of the three TV channels. The USA in these films seemed so exotic and exciting to a kid from dull Middlesex. Consequently, I'm fascinated with Americana and I try to create images that look like they could be stills from old movies, little one-frame self-contained stories. Santa Pod Raceway in Bedfordshire is a favourite place for taking pictures, as are classic car meets and vintage beach racing events around the UK. I hope to take a trip to the US again soon.

Tell us about your pictures

One of them in particular has an amusing story. 'Race the Waves' was taken at Saunton Sands in North Devon. I later posted the image on social media and was sent a message saying, 'Look at me go!'. The guy riding the motorcycle had recognised himself and messaged me to say how much he loved the picture, which was great!

See more

[flickr.com/photos/153383964@N08](https://www.flickr.com/photos/153383964@N08)

Funland

1 Though there are people in the frame, this shot of the funfair at Santa Pod Raceway has a nice empty feel to it
Lumix G9, 30mm, 1/100sec at f/1.4, ISO 200





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The **Reader Portfolio** winner chosen will receive a copy of **Skylum Luminar AI**, worth £79. See www.skylum.com

Luminar is a fully featured photo editor for Mac and PC designed for photographers of all skill levels, blending pro-level tools with remarkable ease of use and an enjoyable experience. A new Library feature lets you organise, find and rate images easily, while over 100 editing features, plus a suite of fast AI-powered technologies under the hood, will make any image stand out.



Submit your images

Please see the 'Pictures' section on page 3 for details of how to submit. You could see your photos here in a future issue!



2 Race the Waves

2 Taken at a vintage car club event on Saunton Sands, Devon. I used a slow shutter speed to blur the motorcycle and rider, and give a sense of speed.
Lumix G9, 30mm, 1/60sec at f/14, ISO 200



3 Susie's Diner

3 In a booth at Susie's American-themed diner sat this characterful-looking fella. I took a shot and moved on, later discovering I'd caught him with his eyes shut - damn! I like it anyway
Lumix G9, 30mm, 1/80sec at f/1.4, ISO 200

4 Old Blue

4 This fabulous old 1960 El Dorado looked as if it had many tales to tell. I was hoping to speak to the owner, but he/she wasn't around, and I had to move on. The motel made the perfect backdrop
Lumix G9, 30mm, 1/800sec at f/1.4, ISO 200

5 Bagdad Café

5 The Bagdad Café is a famous landmark on Route 66 near Newberry Springs, California. I thought it looked very cool framed by this old Chevy windshield
Lumix G9, 30mm, 1/600sec at f/8, ISO 200





Make money from sports club photography

TeamPhotoOrdering is a new service which helps you make money by shooting local sports teams – you don't need to be a pro portrait shooter, and the editing, printing and marketing comes as part of the package

Event and social photographers, such as wedding shooters, have been hit hard by a perfect storm over the past few years – the pandemic was one thing, but now we're in a period of great economic uncertainty, with potential clients tightening their belts. You can still make money from

events and portrait photography, however, and to tie in with this action special issue of AP, here's how you can turn a tidy profit from taking shots of local sports teams, dance clubs and the like.

TeamPhotoOrdering is a new service set up by Stanley Baker Studios, a long-established (since 1964) photo lab and

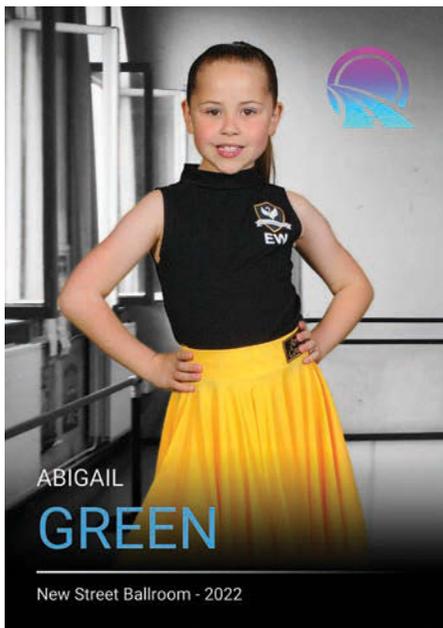
printing company with a strong background in school photography. Using a similar package to that provided for school photographers, TeamPhotoOrdering provides a complete editing and marketing service for images of local sports teams and similar clubs – all you need do is to make the initial contact and take the photos.

Not just for pros

The TeamPhotoOrdering service has been created to provide a seamless link between shooting the perfect team portraits and the final images being delivered to customers. 'This makes it a viable alternative to wedding photography, while matching the earning potential,' said the company's Andy Brown. 'We wanted to offer sports clubs and teams the same package that we offer schools and give photographers a better deal too.'

You don't need to be established as a professional photographer to benefit from TeamPhotoOrdering. As Andy explains, 'You can earn around your day jobs or studies, without the hassle of editing, customer service and finding a reliable printer. We are looking for photographers to really put this system through its paces – to grow their business around their talent and passion, with our decades of experience at their back.'

All you need is a good understanding of your camera and lighting equipment,



Parents will appreciate the chance to get hold of quality shots of their kids enjoying hobbies



It's not just for sports teams – a range of local clubs and societies are likely to be interested

with TeamPhotoOrdering offering you pointers and guidelines for shoot days and finding business.

Much more than printing

Sign up with TeamPhotoOrdering and the editing, printing, packing and delivery of your photos of sports teams are all included. There is no subscription model – the system is free to use – and there are unlimited photo uploads, so you can submit as many images of sports teams as you wish. TeamPhotoOrdering is much more than a glorified editing and printing service, however, as it will also help you find bookings, with tips from other photographers who know both the photography and sports industries well. You get help with your marketing too, with sample images provided for your social media and website.

All customer care and administration are taken care of by TeamPhotoOrdering. Email andy.brown@sbsdigital.co.uk or call 01255 242200, asking for Andy.



TeamPhotoOrdering takes care of the prints, delivering a high-quality service to customers

Case study: Dom's story



Having studied photography at college and doing favours to friends of friends, Dom Taylor wanted to start earning from his creative talent while also

deepening his experience. 'I came across TeamPhotoOrdering while exploring the idea of sports photography and thought it seemed worth a try,' he explains. 'It was something different and I didn't need to invest in software or start paying subscriptions.' Now, he expects to earn over £1,000 per club shoot, potentially.

All the images in this spread were shot by Dom and later customised via the TeamPhotoOrdering system. 'Having never taken such a volume of portraits before, we knew that we needed to support Dom as best we can,' Andy Brown adds. 'Several months on, we are still receiving glowing feedback from parents and players about both the shoot days and final images taken by Dom.' Not only that, but Dom's images are generating business organically. 'We receive enquiries from competing clubs who want the same thing done for their teams,' says Andy. 'We can then happily pass that business on to the photographer, who then organises the shoot day.'



Exclusive discount

Any AP reader interested in joining TeamPhotoOrdering between 25 October and 25 November 2022 will receive 25 free printed brochures. Branded with your business name and contact details, this will give you a kickstart in growing your portrait photography business and talent. For full details, simply visit the website at sbsdigital.co.uk/photographers-wanted/ and quote **AP22** in the message box.





At a glance

£7369 body only

- 102MP 43.8x32.9mm sensor
- 7-stop IBIS
- 1TB internal memory
- Phase detection AF
- 5.76m-dot OLED viewfinder
- 3.6in tilting touchscreen

Hasselblad X2D 100C

Björn again. A faster processor, phase detection AF and a new 100MP sensor have given the Hasselblad X series a whole new lease of life, says **Damien Demolder**

For and against

- + Impressive resolution
- + Great colour and image quality
- + Much faster responses than X1D II 50C
- + Dramatically improved AF
- + Excellent dynamic range
- + High-quality EVF
- Price
- AF still not as fast as FF mirrorless cameras
- Flip screen gets covered by the EVF housing

Data file

Sensor	102MP BSI CMOS, 43.8x32.9mm
Output size	11,656x8742
Lens mount	Hasselblad XCD
Shutter speeds	68min - 1/4000sec (mechanical), 68min - 1/6000sec (electronic)
Sensitivity	ISO 64-25,600
Exposure modes	PASM
Metering	Multi, spot, average, centre-weighted
Exp comp	+/-5 EV in 0.3EV steps
Cont shooting	3.3fps in 14-bit colour
Screen	3.6in, 2.36m-dot touchscreen
Viewfinder	5.76m-dot OLED, 60fps, 1x magnification
AF points	294
Video	NA
External mic	NA
Memory card	CFexpress Type B + 1TB SSD
Power	7.2VDC/3400mAh rechargeable Li-ion
Battery life	Up to 420 shots
Dimensions	148.5x106x74.5mm
Weight	790g body only

The digital age has proven quite challenging for a lot of photographic companies, especially for those from a medium format background. Big sensors and a market a fraction of the size of the mainstream made it a very expensive business, and while many went to the wall Hasselblad has hung on. After a long and pretty dark winter for the Swedish firm, spring sprung in 2016 when it launched the Hasselblad X1D 50C. This small, highly portable and relatively lightweight camera marked quite a diversion from the company's H series of studio models and, with a price that was attractive at the time, the fortunes of this historic brand were miraculously transformed. Demand exceeded capacity for supply, order books were once again full and a wealthy investor

was delivered by drone to inject funds that allowed the necessary expansion. The X1D 50C wasn't the fastest gun in town and offered a great deal of room for improvement, but with time the updated X1D II 50C increased reactions and went some way towards making it a modern performer.

This latest model though, the X2D 100C, promises to bring the series right up to date with faster processing, faster AF and a whole new user experience. It also has double the pixel count, and some other surprising new features – including the beginning of a new series of lenses called XCD V.



Image quality from the 100MP medium-format sensor is superb. Phocus does a good job of fixing artefacts such as moiré patterning
Hasselblad X2D 100C, XCD 55mm f/2.5, 1/575sec at f/5.6, ISO 64



Features

The headlines around the X2D will focus on its new 100-million-pixel sensor – higher resolution than any full-frame camera, and matching its closest competitor, the Fujifilm GFX100S. It is indeed impressive by any standards, but in a world where 50MP is more than enough for most things, I'm not sure it's the most important detail of the new model's specification. What matters more is that the new sensor has phase detection AF, that it is back-illuminated to keep image noise at bay, and that it sits on a 5-axis in-body image stabilisation system that offers us 7 stops of

anti-shake compensation. As before, a sensor measuring 43.8x32.9mm counts as 'medium format', but even at that size it brings a number of advantages over regular full-frame sensors for depth-of-field control and light-gathering ability.

Images from this sensor are actually made with almost 102 photodiodes and measure 11,656x8,742 pixels, with raw files taking up 206MB of disk space and JPEGs using between 60 and 90MB, depending on the content. Hasselblad takes the edge off the pain of saving such large files by giving us a built-in 1TB SSD with a capacity to hold

over 5,000 raw files or about 16,000 JPEG images. The idea here is to make sure we have memory with extremely high read and write speeds, so the camera doesn't become clogged up with unsaved data. The SSD writes at 2,370MB/s, and we have a 10GB/s USB 3.2 Gen 2 port with which to get the files out of the camera later. If you don't want to use the SSD, or you fill it up, you can always resort to the CFexpress Type B slot that can handle cards of up to 512GB.

Other key aspects around the new sensor are that we have the choice to shoot in 14-bit or 16-bit colour, and that Hasselblad says

that in 16-bit we can expect 15 stops of dynamic range. This 16-bit mode slows the camera, but in 14-bit we should be able to achieve 3.3fps.

The adoption of phase detection focusing is another major change for the system. The sensor uses 294 phase detection points that between them cover 97% of the sensor. These combine with a new processor running the camera that, we are told, has increased the speed of the AF by 66% over the system in the X1D II 50C. The new XCD V lenses also help with AF speed, as Hasselblad claims they are 3x faster



High-ISO performance is very creditable indeed, with noise being grain-like attractive

Hasselblad X2D 100C, XCD 55mm f/2.5, 6 seconds at f/19, ISO 6400

▶ than the existing optics. Notable omissions include focus bracketing, XPan aspect ratio and the ability to shoot video. The former will be installed later via a firmware update, but Hasselblad says it has no plans to add video in the near future.

Build and handling

I have to say that I rather liked the pop-up mode dial on the original Hasselblad X1D and was slightly disappointed to see that it had been replaced by an information panel. At least, I was disappointed at first, but realised quite quickly that I rarely change exposure modes and had less use for a theatrical knob than I'd like to admit.

The new information panel on the top plate of the Hasselblad X2D 100C is a good deal more useful, and I found I referred to it a lot while using the camera. It's bright and clear, its icons are large and it neatly shows me all the things I need to know at a glance. It's collection of type styles and font shades also makes it a pleasure to look at while differentiating the areas of information so that we find what

we are looking for very quickly. I like too that a quick press of the on/off button triggers a battery-level display so we can check our power without having to wait for the camera to start up.

Not that waiting for the camera to start up is much of a drag any more, as everything about this camera is very much quicker than it was in the previous models. From pressing the button to the shutter firing takes less than two seconds. That might seem an eternity to many photographers, but in medium format land that's pretty good.

In use the camera is really very comfortable to hold and to operate. It has a big grip for the right hand that lends us plenty of purchase for both thumb and fingers, so we never need to feel as though we are going to drop it. The camera is as heavy as you'd expect a big metal body to be, but the weight is nicely balanced so that in two-handed use it doesn't feel cumbersome at all. The body is extremely well made, and on the whole, the X2D really is a joy to operate.

The menu is slightly streamlined since the previous

incarnation of the camera and the tab that switched between stills, video and settings has been done away with – without video it would be somewhat redundant, I suppose. Otherwise we have the same icon-based menu system as before, but that now responds a good deal more quickly. Like anything, we need to find out where everything is, but on the whole Hasselblad has given us a very straightforward and simple system. A few buttons can be customised and we can alter the function of the control ring on the new XCD V lenses.

Although I liked the idea of the sensational amount of internal storage this camera offers, I wasn't sure how I'd feel using it instead of removable cards. But I found quickly that I rather liked it. It certainly allayed my constant fear of getting to a job with no memory cards, and the 1TB capacity is so much more than just a token gesture that you'll actually never have to pander to the expensive tastes of the CFexpress card slot.

Getting the images off the camera requires that there's some life left in the battery as we

need to switch the camera on and interact with the rear screen – as well as maintain power until all the images are copied over. Although the camera plugs in via the same USB port that charges the camera, there's no

I was very pleased with Hasselblad's moderate, balanced colour palette

Hasselblad X2D 100C, XCD 55mm f/2.5, 1/456sec at f/5.6, ISO 64



charge going to the camera during image transfer.

Viewfinder and screen

Being a big fan of shooting from a rear screen I was very pleased to see we now have a hinged panel that can flip up for low-angled shooting. It is well designed from a ruggedness and durability perspective, so the hinge and the connections between the screen and the body don't feel like points vulnerable to damage.

In the desire to avoid this being a weakness however, Hasselblad has made the screen very difficult to use in the flipped-up position. The top length of the screen stays attached to the back of the body and when flipped up a really quite significant section of our composition will be obscured by the rather bulbous EVF housing. It's pretty unfortunate actually, and I found that when shooting from a low angle so much of the frame is covered that I wasn't confident enough to press the shutter release. Other designs deal with this issue by allowing the screen to pull away from the body. As someone who likes to shoot in portrait orientation, I was also a bit disappointed that the screen doesn't flip up from the side. It's not nearly as useful as the three-way tilting screen on the Fujifilm GFX100S, and in the end,

I used the flip-up function far less than I would have liked.

The new larger and clearer 5.76-million-dot EVF though almost makes up for the flip-screen disappointment, and in fact a knock-on effect of the obstruction of the rear screen was that I used the EVF much more than I would normally. Glasses-wearers will have to adjust as best they can, because the eye-relief of the 1x magnification finder didn't quite allow me to see the whole screen at once. But with my glasses off, I was able to get the dioptre adjustment close enough that I could judge my images. I also found that with glasses on, the eye-sensor didn't always recognise my presence as well as I'd like and that my nose was prone to touching the rear screen and shifting my focus position. Without glasses I could tuck my nose around the side of the camera and find a very comfortable shooting position.

The camera has no physical dioptre control dial as this is now handled via the menu system. On demand the EVF screen displays the name Victor at different sizes, and we use the main control wheels to electronically adjust the dioptre until the words appear sharp. It's pretty cool!

It is possible to use the



Focal points

The Hasselblad X2D 100C has numerous improvements over the existing model

Sensor

The new 43.8x32.9mm sensor produces images measuring 11,656x8,742 pixels, uses 294 phase detection points and has an IBIS system that is claimed to offer 7 stops of stabilisation.

Internal memory

We don't often see a digital camera with internal memory, but the Hasselblad X2D 100C comes with 1TB of storage in the form of a fast read/write SSD.

Flip-up screen

The rear LCD on the camera is actually the same 2.36-million-dot model we saw on the X1D II 50C but now it comes with a hinge so it can be flipped up into two positions - 40° or 70°.



Large EVF

The new EVF uses a high-resolution 5.76-million-pixel panel that refreshes at a rate of 60fps. The magnification through the finder is 1x, so the view is big, clear and very easy to use.

New lens tech

Hasselblad has introduced three new lenses that make the most of the speed of the X2D 100C - the XCD 2,5/38V, XCD 2,5/38V and XCD 2,5/90V. The lenses have a completely new design with manual focus clutch control, a focus scale and a 3x faster AF system.

Flash

As before, the Hasselblad X system is compatible with Nikon flashes, which can be controlled directly through the camera's menu system.



rear screen as a touch pad while the EVF is in use, so we can use a thumb to move the AF area, which is very handy. There is no joystick, so operating the menu via the EVF requires learning a pretty efficient turn-and-press routine with the finger wheels. It took me about ten minutes to get used to, and allowed me to adjust settings without having to take the camera from my eye.

Performance

The new processor, phase detection AF and the new XCD V lenses make this X2D 100C a totally different beast from the model that came before. It looks much the same, but the speed of operation is streets ahead in almost every way. Start-up times are dramatically reduced and the general reactions of the camera, from screen presses to dial turns, are very much more responsive. The interval between a shutter button press and the picture being taken is impressively short.

There are no delays either between frames as the camera tucks the recorded files away to bed very quickly, and images just shot are shown on the rear screen or in the viewfinder without delay. In all, operation is

a whole lot more slick than it is in the previous model.

This is not a sportsman's camera though, and the maximum frame rate of 3.3fps in 14-bit colour mode is unlikely to impress anyone. In reality it is probably not going to deter likely buyers though, as I'm not sure anyone would expect a camera like this to have breathtaking high drive modes.

Having in-body image stabilisation in a medium format camera is a treat and a great reassurance that we'll be able to get the best from the sensor and lenses. Fujifilm has IBIS in its GFX models too, although Hasselblad claims its system provides more stability. I've been impressed with it, and found I could handhold, with some effort of my own, at shutter speeds as long as a second, and more casually well below what would normally be considered safe. I got very good hit rates with 1/8sec with the 55mm lens.

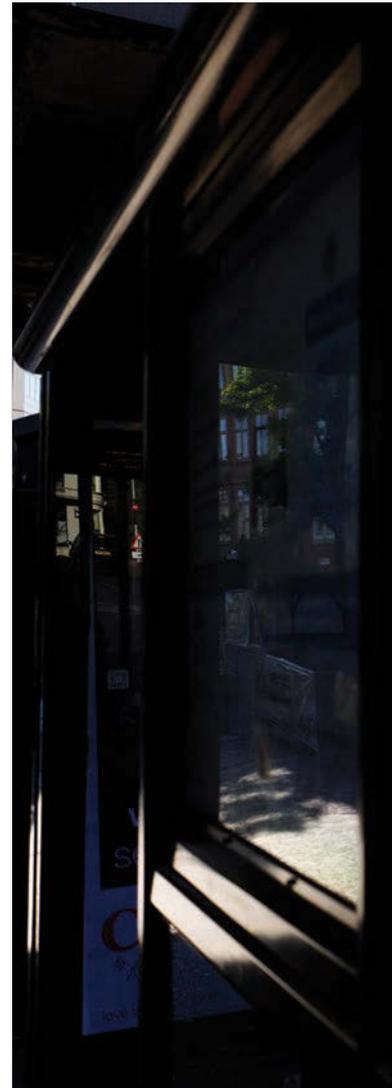
The camera's metering system is reliable enough and I found that I needed to intervene less frequently than usual to get an exposure I liked.

I never knew what to expect from the batteries of cameras like this, but was pleased to find

that despite all the new speed enhancements, or perhaps because of them, battery life isn't too bad. Hasselblad says we should get 420 shots per charge, and while I'm not certain I got quite that many I did spend a lot of time with the camera on while walking around, and I reviewed my efforts at frequent intervals. As with most modern mirrorless cameras, you are going to have to budget for a spare battery.

Autofocus

The AF system of this series is transformed by the combination of three things – the addition of phase detection, the camera's faster processor and the speed of the new lenses. The camera I was using only had a basic AF structure with few choices of AF configuration, and none of the face/eye detection that I'm told will come via a firmware update in the near future. Even in this state, I found it performed really rather well, for a medium format camera. We shouldn't expect to be able to shoot fast-moving action close to the lens, but you can't do that with a Fujifilm GFX camera either. More to the point, people walking quickly at a moderate distance are now game where they weren't with the X1D II



The updated AF handled quick grab shots easily
Hasselblad X2D 100C, XCD 55mm
f/2.5, 1/640sec at f/2.5,
ISO 64



50C. I was very pleasantly surprised by how well the camera handled street situations and how the new reactions allowed me to capture shots that I couldn't before.

In portrait situations the camera's more decisive AF system makes a massive difference and we have much less hunting than before – hardly any at all, in fact. Switching to one of the original lenses I noted that while the performance is much improved over the same lens on the X1D II, to get the benefits of the new focusing system we need to use the new-style XCD V models. That will be hard to hear for those who are already invested in the system, but I suppose that's the nature of progress.

At the moment the camera only offers AF-S mode with no



The metering gets things right far more often than not
Hasselblad X2D 100C, XCD 38mm f/2.5,
1/2000sec at f/3.4, ISO 400

Verdict



I LIKED the Hasselblad X1D II 50C a good deal, but it was the sort of camera you could only use for certain subjects. The X2D 100C is a dramatically more flexible machine that will happily tackle a wider range of tasks. We still aren't talking about the sort of AF and system reactions we'd expect from a top-end full-frame camera, but for a medium format model this is top class.

Resolution, colour, sharpness and tonal rendition straight from the camera are excellent, and the high-ISO noise performance, alongside that 7-stop IBIS, means we don't have to think twice about leaving the tripod at home.

This isn't a casual purchase, of course, with the body costing almost £1,900 more than the similarly sized and specified Fujifilm GFX100S. The new XCD V lenses also take the cost of ownership up significantly. It's as hard to talk about value for money when it comes to Hasselblad as it is with Leica, as logic and practical decisions can become intertwined with more abstract concepts. But if you have the money to spare, you probably won't be disappointed. More firmware updates will flesh out the feature set and AF options in time, but even now the Hasselblad X2D 100C is an absolute delight to use.

FEATURES	7/10
BUILD & HANDLING	9/10
METERING	8/10
AUTOFOCUS	7/10
AWB & COLOUR	10/10
DYNAMIC RANGE	10/10
IMAGE QUALITY	9/10
VIEWFINDER/LCD	8/10

continuous option, but I assume that will change with the firmware that introduces face detection.

Image quality

Despite the camera I was using not being a production sample, I've been impressed with the quality of the images it produces. I really like the more moderate nature of the colours and how they are so nicely balanced straight out of the camera. They saturate nicely in software when you want them to, and contrast can be played with dramatically, but we begin with a very nice natural-looking image. Having warmed up my mouse and calibrated my monitor, I was a bit disappointed that I didn't need to do very much to these files to make them look good.

Hasselblad's Phocus software does a nicer job of processing

these raw files, and seems more in tune with the structure and colour characteristics of the pictures. But Adobe Camera Raw is a good deal more convenient to use. The occasional moiré patterning can be removed more easily with Phocus too.

In either package, very bright tones that look lost to white miraculously reappear with a twitch of the highlight slider, and shadows can easily be brought back to life. In fact, the dynamic range is such that it's very easy to make an unrealistic-looking image if you apply too much tonal recovery for the scene.

Noise performance is very good even though it wasn't finalised in my camera and I was getting updates for Phocus 3.7 while I was using it. While some texture is present in all images when you look closely enough, the 100MP

files will need close inspection less often than images with fewer pixels. Noise becomes a noticeable part of the image at ISO 3200, but the noise structure is grain-like and not unattractive. In JPEGs the in-camera noise reduction at higher ISO settings is a little over-enthusiastic for my liking, but it certainly produces a clean-looking image, although sometimes tonal transitions that appear smooth without noise reduction become stepped when it is applied.

Resolution is exceptional of course, and the sensor and lenses combine to provide an extraordinary amount of detail from corner to corner. If you abide by the 300ppi printing standard you'll find you get pretty astonishing 40x30in prints, though these days you can go much bigger than that.





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Take your video projects further

In our final module, we look at ways to push your video skills to the next levels by taking on projects and sharing your work...

So, you've learnt the video jargon, taken control of the movie settings on your camera and can now even edit together footage in post-production...the question is, what are you going to do next? If you've followed all the modules in this series, you should now have a firm grasp on the massive potential your camera can offer you, the footage you can create and how you can make your movies stand out from the crowd. There should be no doubt that there's never been a better time to step into video and explore all the creative opportunities today's hybrid cameras can offer. But the journey doesn't stop here; in fact, this is just the beginning as there's so much more you can pursue with these newly found skills.

Share your video

Now that you've created a film, it's time to share your footage with the masses and the good news is that today's videographers have many options. Let's start with social media. As you'll already know, platforms like Facebook and Instagram are fantastic ways to share a video with a huge amount of people in a convenient way. What's more, you can further target the people who you think will find your video interesting by adding hashtags during the upload so, for example, if your video is about macro photography, and you add this as a hashtag, those people will be able to search out and find your video much more easily. There are even more platforms to explore too; for example, YouTube is a great platform to use if your video is more long form (although YouTube does now support quicker clips thanks to YouTube Shorts). Lastly, many videographers are



Today's hybrid cameras offer you many creative opportunities for video shooting

pushing the boundaries and sharing their work on newer platforms such as TikTok, where vertically filmed video is the norm.

Take on a personal project

Sometimes those new to video may struggle to decide on what exactly they want to film, and a way to overcome this is to take on a personal project. By taking the time to sit down and plan out a film you'd like to produce, this will streamline your thinking, enable you to plan out shooting days and the kit you'll need to capture each scene. Inspiration can come from

anywhere, but a good starting point is to look close to home as this will mean the project will be something familiar. Personal projects I've worked on include a film on family war graves and my child's football club; and the important thing to remember is that these films don't have to be Hollywood quality, they act as a vehicle for you to progress your skills and techniques as you climb up the videography ladder. Alternatively, you can lend your emerging video skills by donating your time for good causes. Charities always have a need for video, mostly to create social media footage

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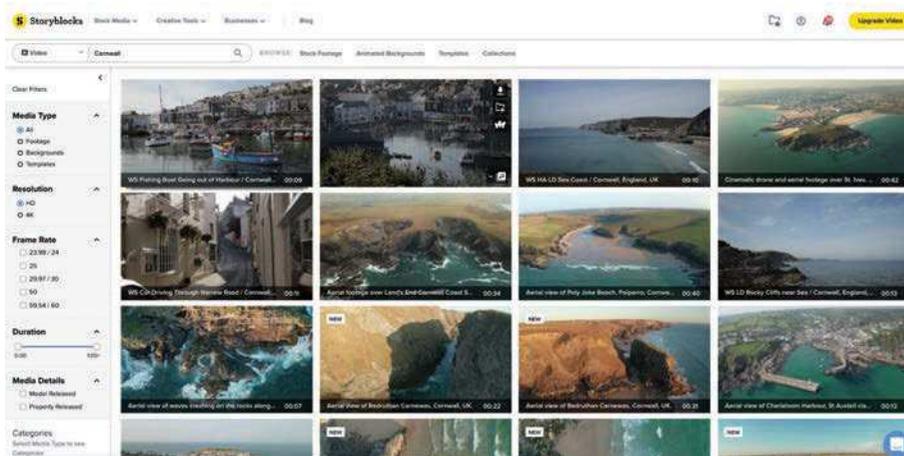
that will attract donations, but also to capture fundraising events. Yes, the likelihood of financial reward is low, but the opportunity to build your skills while doing something positive for your community is another type of reward.

Enter your film into a competition

For those out there who really want to start taking their videography more seriously, then entering your films into competitions can bring recognition and acclaim. Again, we're not saying you dive in and expect to win a BAFTA – instead, start with local film festivals or more niche competitions. Just like competitions for stills imagery, being shortlisted or even winning a competition can prove to be a shot in the arm for your videography career



Publish your film on Vimeo for exposure – its daily Staff Picks are highlighted on its homepage



You could make money via stock video sites, which need your content to sell to their clients

and will serve to get your name out there and in front of the right people. One convenient way into this sector is to publish your film on Vimeo, a video hosting platform. Vimeo selects different videos every day as Staff Picks, and these films are highlighted on the website's homepage, which will bring a return in both exposure and views.

Make money with your video work

The demand for video has exploded in recent years so the potential to make money from your video is absolutely huge. Perhaps you want to offer both stills and video as a package – great for couples looking to get both types of content for their wedding without paying two different professionals. Much like stills photography, there are plenty of stock video sites out there that need your content to sell to their clients. Say you're a landscape photographer – next time you are out at a scenic location capturing stills, switch the camera to movie mode and shoot some video sequences because these could well end up making you money. Those looking

to take video further may also want to step into the world of corporate video; while filming interviews with CEOs may not push you as much creatively, the financial rewards for such work are often higher.

Take your learning even further

Our modules are a great foundation in using your camera to create video. We've explained video settings, the kit that will make the difference, how to perfect audio in your videos and how to bring your footage together in post-production. However, the journey doesn't have to stop here. You can progress to more advanced techniques such as working with Log profiles or using focus assist features such as Peaking. Push your editing skills by creating your own transitions or taking your grading further.

As with stills photography, there is always something new to learn with video and your camera is the key to unlocking these creative opportunities. For specific technique walkthroughs, YouTube can prove to be very useful and offers an enormous choice of walkthrough videos, although obviously the quality of the videos will vary, as it's a free resource. Best of luck with your new video skills.



Push your editing skills by creating your own transitions or working with Log profiles

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Manfrotto Pro Light Multiloader Backpack M

A capacious, well-made and versatile backpack, tested by **Andy Westlake**

● £239 ● www.manfrotto.com/uk-en

Manfrotto's Pro Light range is designed for professional and serious enthusiast photographers. It includes four similarly sized backpacks, which differ in how they provide access to your kit. Of these, the Multiloader is the most versatile, as it has openings at the top, front and either side.

Measuring 35.5 x 26 x 54cm, this is a capacious bag that'll hold a considerable quantity of kit while still meeting carry-on regulations, at least for the more generous airlines. As supplied, it's split into two separate compartments, but if you prefer, it can be opened up to a single large space. It's supplied with plenty of Manfrotto's M-Guard internal dividers, which provide good protection while minimising bulk. This means you should be able to configure it exactly how you need.

In the top section, I was able to fit a full-frame Sony A7-series body fitted with a 24-105mm f/4 zoom, plus 16-35mm f/4 and 45mm f/2.8 lenses alongside. The main compartment is large enough to hold another body with a vertical grip and telephoto zoom attached, such as a 70-200mm f/2.8, plus four smaller lenses. Inside pockets provide space for small accessories, and there's a document pocket on the front. Expanding pockets on either side will hold a water bottle or tripod.

Where this bag really stands out, though, is the level of flexibility it provides for accessing your kit. A single zip meanders around the outside, allowing the side and front panels to open up, depending on how you arrange the four zip pulls. In principle, you can even reconfigure the carrying straps to use it like a shoulder or sling bag for shooting on the go. But given how heavy it can get when full, I'm not convinced this is a practical idea.

The quality of materials and construction is excellent, with smoothly running zips and generous padding throughout. Crucially, given the size of the bag, the harness is top-notch, with the foldaway waistbelt helping to distribute the load onto your hips. Meanwhile the mesh-covered, padded back has air channels to help keep you cool. Fully laden with a tripod attached, the weight can easily exceed 14kg, but I still found it quite comfortable to carry.

Verdict

The Manfrotto Pro Light Multiloader is a great choice for serious photographers who need to carry a large amount of kit and keep it well protected, while maintaining rapid access.

Lock

A TSA combination lock is sewn on, tucking into its own pocket. It secures the zip pulls for the top, main & laptop compartments.

Cover

The waterproof cover is easy to fit and protects all the zip openings. It's silvered on the reverse to protect your kit from heat on sunny days.

Harness

The richly padded shoulder straps and belt tuck away neatly for stowing the bag in overhead lockers.

Tripod

A tripod, monopod, or walking poles etc can be fixed onto the front or sides, via straps that tuck away when not in use.

Amateur
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Testbench
GOLD
★★★★★

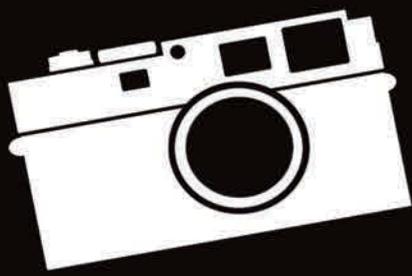
At a glance

- Pro-quality backpack
- Holds 2 cameras and 8 lenses
- 15in laptop compartment
- 35.5x26x54cm (external)

PRO LIGHT BACKPACKS

Manfrotto also offers three other Pro Light backpacks. The Frontloader (right) and Backloader are simpler, more affordable designs, offering front and back access for £149 and £134 respectively. Meanwhile the front-loading Flexloader boasts a full-height pocket for carrying a DSLR gimbal, and costs £224.





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Tony Kemplen on the ... Zeiss Ikon Kolibri

A small film camera that's manually operated and takes 127 film

This little offering from Zeiss dates from the early 1930s and uses 127 film, a smaller obsolete version of the still widely available 120 roll film. I acquired mine in 2011 when I became interested in 127 cameras from that era. Many of these are very similar in design, but the Kolibri stands out from the crowd in terms of its appearance.

In order to allow a camera to fit into a pocket or small bag, some way of collapsing the lens has to be found. Folding bellows were a popular solution, but instead, Zeiss went for a rigid metal tube, which collapses into the camera body. This is a more robust design, but adds to the weight.

Three common formats exist for 127 film. The Kolibri takes sixteen 3cm x 4cm exposures per roll, which is sometimes known as half-frame. This refers back to the origins of 127, when there



A suitably vintage-looking view of London on a rainy day

were eight 6cm x 4cm negatives per roll. This format was known as VP, short for vest pocket.

The Kolibri comes in a distinctive pale brown leather case, rather like a jewellery case. It hinges open to reveal the camera, and there is a small compartment in the lid to house a filter, and importantly a little recess in which an insignificant looking but vital metal peg sits. This screws into the camera and provides a support which allows it to stand upright on a flat surface.

The lens and shutter will be familiar to anyone with an interest in the myriad cameras put out by Zeiss in the middle of the last century. A 50mm f/3.5 Tessar is mounted on a Compur shutter, with speeds running from 1 to 1/300th second. On my example the slow speeds are very sluggish, but everything above 1/25th sounds about right.

The camera is entirely manual. After winding on the film, focusing

is achieved using a scale, and the aperture and shutter speed are set with dials. Prior to taking the picture the shutter has to be cocked using a little lever, then you're ready to go. I make a habit of winding the film immediately after taking a shot, otherwise there's a risk of double exposures or blank frames if I have to try and remember each time whether I've already wound on.

Kolibri is the German word for hummingbird, but elegant and streamlined though this camera is, it bears no comparison to a hummingbird when it comes to weight. It accompanied me on a trip to London on a very wet day; reckoning that this octogenarian camera wouldn't like the rain very much, I stood under Hungerford Bridge to take this photo of the South Bank with the Houses of Parliament in the distance. The film was Efke 100 black & white film which I developed in Ilfosol 3.



The Kolibri boasts a distinctive design

Tony Kemplen's love of photography began as a teenager and ever since he has been collecting cameras with a view to testing as many as he can. You can follow his progress on his 52 Cameras blog at 52cameras.blogspot.co.uk.

See more photos from the Zeiss Ikon Kolibri at www.flickr.com/tony_kemplen/sets/72157627952952546.

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Buying Guide

111
cameras
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Our comprehensive listing of key camera specifications

Cameras

Cameras come in three types: DSLRs with optical viewfinders, mirrorless models with electronic viewing, and compact cameras with non-interchangeable lenses

Controls

Entry-level cameras tend to have simple, easy-to-understand controls, while more expensive models add lots of buttons and dials to give quick access to settings.

Viewfinder

The biggest difference between DSLRs and mirrorless cameras is that the latter use electronic, rather than optical viewfinders. Some advanced compact cameras also have built-in electronic viewfinders to complement their rear LCD screens.

Compact cameras

These range from small, pocketable models to large bridge-type cameras with long zoom lenses and SLR-style designs. In this guide, we're only including those with relatively large sensors for high image quality, raw format recording and manual controls.



Handgrip

DSLRs traditionally have relatively large handgrips, while many mirrorless models have much smaller grips to keep size down. However, some can accept accessory grips to improve handling with larger lenses.

Lens mount

Each camera brand uses its own lens mount, and mirrorless cameras use different lenses to DSLRs even from the same brand. However, mirrorless models can often use DSLR lenses via a mount adapter.

ALMOST all serious photographers prefer to use cameras with interchangeable lenses, as this gives the greatest degree of creative flexibility. At one time, this meant digital single-lens-reflex (DSLR) cameras, but these have now been joined by mirrorless cameras that use electronic viewfinders. The latest models are true alternatives to DSLRs, offering the same image quality and creative options. Camera

manufacturers offer a range of options, from simple, relatively inexpensive beginner-friendly designs, to sophisticated professional models. In the middle of the range you'll find enthusiast cameras with more-advanced control layouts. Meanwhile the term 'compact' refers to cameras with built-in lenses, regardless of their size. Many offer excellent image quality and full manual control.

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Mirrorless cameras				SENSOR SIZE	RESOLUTION (MP)	LENS MOUNT	MAX ISO	VIDEO	MIC/TRIP	AF POINTS	BURST MODE (FPS)	VIEWFINDER	BUILT-IN HI-FI	FLASH	SCREEN SIZE (IN)	ARTICULATED LCD	TOUCHSCREEN	BATTERY LIFE (SHOTS)	WIDTH (MM)	HEIGHT (MM)	DEPTH (MM)	WEIGHT (G)
NAME & MODEL	RRP	SCORE	SUMMARY	SHOOTING										SCREEN			DIMENSIONS					
Canon EOS M200	£499		Basic entry-level viewfinderless model gains 4K video recording	APS-C	24.1	Canon M	25,600	3840		143	6.1				3			315	108.2	67.1	35.1	299
Canon EOS M50 Mark II	£699	4★	Likeable, easy-to-use entry-level APS-C model with viewfinder	APS-C	24.2	Canon M	51,200	3840		143	10				3			250	116.3	88.1	58.7	387
Canon EOS M6 Mark II	£869	4★	Sports 32.5MP sensor and 14fps shooting, uses removable viewfinder	APS-C	32.5	Canon M	51,200	3840		143	14				3			305	119.6	70	49.2	398
Canon EOS RP	£1400	4★	Compact and affordable but over-simplified full-frame camera ever	FF	26.2	Canon RF	102,400	3840		4779	5				3			250	132.5	85	70	485
Canon EOS R	£2350	4★	Canon's first full-frame mirrorless uses the EOS 5D Mark IV's sensor	FF	30.3	Canon RF	102,400	3840		5655	8				3.2			350	135.8	98.3	84.4	660
Canon EOS R3	£5880	5★	High-speed, pro-spec flagship model that's packed full of clever technology	FF	24.1	Canon RF	204,800	6000		4779	30				3.2			860	150	142.6	87.2	1015
Canon EOS R5	£4200	4.5★	Remarkable 45MP powerhouse capable of internal 8K video recording	FF	45	Canon RF	102,400	4096		5940	12				3.2			320	135.8	97.5	88	738
Canon EOS R6	£2500	5★	Superb all-rounder with in-body stabilisation and dual card slots	FF	20.1	Canon RF	204,800	3840		6072	12				3			380	138.4	97.5	88.4	680
Canon EOS R7	£1350	4.5★	Fast APS-C RF-mount model with sophisticated autofocus from the EOS R3	APS-C	32.5	Canon RF	51,200	3840		651	15				3			770	132	90.4	91.7	530
Canon EOS R10	£900	4★	Compact, lightweight yet highly specified RF-mount APS-C mirrorless model	APS-C	24	Canon RF	51,200	3840		651	15				3			430	122.5	87.8	83.4	429
Fujifilm X-E4	£799	4★	Sharply-styled, compact mirrorless model with a tilt-up selfie screen	APS-C	26.1	Fujifilm X	51,200	3840		425	20				3			460	121.3	72.9	32.7	364
NEW Fujifilm X-H2	£1899		High-resolution pro flagship model with same design as X-H2S	APS-C	40	Fujifilm X	51,200	7680		425	15				3			540	136.3	92.9	84.6	660
Fujifilm X-H2S	£2499	5★	Extremely impressive pro-spec high-speed flagship model	APS-C	26.1	Fujifilm X	51,200	6240		425	40				3			580	136.3	92.9	84.6	660
Fujifilm X-Pro3	£1799	4★	Employs unusual hidden rear LCD design that polarises opinions	APS-C	26.1	Fujifilm X	51,200	4096		425	20				3			370	140.5	82.8	46.1	497
Fujifilm X-S10	£949	5★	Fine SLR-styled model with in-body image stabilisation and large handgrip	APS-C	26.1	Fujifilm X	51,200	3840		425	20				3			325	126	85.1	65.4	465
Fujifilm X-T200	£749	3.5★	Fine handling and great image quality, but slow and buggy in use	APS-C	24.2	Fujifilm X	51,200	3840		425	8				3.5			270	121	83.7	55.1	370
Fujifilm X-T30	£849	5★	Superb mid-range model that borrows much of its tech from the X-T3	APS-C	26.1	Fujifilm X	51,200	3840		425	8				3			380	118.4	82.8	46.8	383
Fujifilm X-T30 II	£769	5★	Gains higher-resolution screen and numerous small updates over X-T30	APS-C	26.1	Fujifilm X	51,200	4096		425	8				3			390	118.4	82.8	46.8	378
Fujifilm X-T3	£1349	5★	New sensor and improved autofocus make it the best APS-C camera yet	APS-C	26.1	Fujifilm X	51,200	4096		425	20				3			390	132.5	92.8	58.8	539
Fujifilm X-T4	£1549	5★	Exciting update with in-body stabilisation and fully articulated screen	APS-C	26.1	Fujifilm X	51,200	4096		425	20				3			500	134.6	92.8	63.8	607
Leica SL2	£5300	4★	Sports 47.3MP full-frame sensor, in-body stabilisation and 5K video	FF	47.3	Leica L	50,000	5120		225	20				3.2			370	147	107	83	916
Leica SL2-S	£3975	4★	More affordable 24MP version of the SL2 with pro video features	FF	24.6	Leica L	100,000	4096		225	25				3.2			510	146	107	83	931
Nikon Z 5	£1719	4★	Simplified version of the Z 6, comes with compact 24-50mm f/4-6.3 zoom	FF	24.3	Nikon Z	102,400	3840		273	4.5				3.2			470	134	100.5	69.5	675
Nikon Z 6	£2099	5★	Full-frame mirrorless all-rounder with 24MP sensor and 12fps shooting	FF	24.5	Nikon Z	204,800	3840		273	12				3.2			330	134	100.5	67.5	675
Nikon Z 6II	£1999	4.5★	Second-generation full-frame mirrorless model with useful updates	FF	24.5	Nikon Z	204,800	3840		273	14				3.2			410	134	100.5	69.5	705
Nikon Z 7	£3399	5★	High-resolution full-frame mirrorless with in-body stabilisation	FF	45.7	Nikon Z	102,400	3840		493	9				3.2			330	134	100.5	67.5	675
Nikon Z 7II	£2999	4.5★	Gains dual card slots, faster shooting, 4K 60p video and vertical grip option	FF	45.7	Nikon Z	102,400	3840		493	10				3.2			420	134	100.5	69.5	705
Nikon Z 9	£5299	5★	Stunning high-speed, high-resolution flagship with pro build and connectivity	FF	45.7	Nikon Z	102,400	7680		493	20				3.2			700	149	149.5	90.5	1340
Nikon Z 30	£699	4★	Designed for vloggers, with articulated screen but no viewfinder	DX	20.9	Nikon Z	204,800	3840		209	11				3			330	128	73.5	59.5	405
Nikon Z 50	£849	5★	Well-specified APS-C mirrorless model boasts excellent handling	DX	20.9	Nikon Z	204,800	3840		209	11				3.2			320	126.5	93.5	60	450
Nikon Z fc	£899	4★	Lovely-looking retro-styled model with fully articulated touchscreen	DX	20.9	Nikon Z	204,800	3840		209	11				3			300	134.5	93.5	43.5	445

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We've tried our hardest to ensure that the information in this guide is as complete and accurate as possible. However, some errors will inevitably have crept in along the way: if you spot one, please let us know by emailing ap.ed@kelsey.co.uk. Unfortunately we don't have space to list every single product on the market, so we don't include the most expensive speciality items. **Before making a purchase we advise you to check prices, along with any crucial specifications or requirements, with either a reputable retailer or the manufacturer's website.**



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Mirrorless cameras

NAME & MODEL	RRP	SCORE	SUMMARY	SENSOR SIZE	RESOLUTION (MP)	LENS MOUNT	MAX ISO	VIDEO	MIC INPUT	SHOOTING				SCREEN		DIMENSIONS				
										AF POINTS	BURST MODE (FPS)	VIEWFINDER	BUILT-IN Wi-Fi	FLASH	SCREEN SIZE (in)	ARTICULATED LCD	BATTERY LIFE (SHOTS)	WIDTH (mm)	HEIGHT (mm)	DEPTH (mm)
Olympus PEN E-P7	£749	4 ★	Viewfinderless model with 20MP sensor and creative processing controls	4/3	20.3	Mic4/3	25,600	3840		121	15			3		360	118.3	68.5	38.1	337
Olympus OM-D E-M10 IV	£699	4.5 ★	Compact, lightweight, enjoyable to use and takes great-looking pictures	4/3	20.2	Mic4/3	25,600	3840		121	15			3		360	121.7	84.4	49	383
Olympus OM-D E-M5 III	£1100	5 ★	Very capable camera with a small, lightweight, weather-sealed body	4/3	20.4	Mic4/3	25,600	4096		121	10			3		310	125.3	85.2	49.7	414
Olympus OM-D E-M1 III	£1600	5 ★	Super-fast, incredible IS and packed full of advanced features	4/3	20.4	Mic4/3	25,600	4096		121	60			3		420	134.1	90.9	68.9	580
Olympus OM-D E-M1X	£2800	4.5 ★	Pro-spec high-speed model with built-in vertical grip	4/3	20.4	Mic4/3	25,600	4096		121	60			3		2580	144.4	146.8	75.4	997
OM System OM-1	£2000	5 ★	Excellent flagship model includes 120fps shooting and subject-detection AF	4/3	20.4	Mic4/3	102,400	4096		1053	120			3		520	134.8	91.6	72.7	599
Panasonic Lumix G9	£1499	4.5 ★	High-speed, rugged photo-centric flagship camera with in-body IS	4/3	20.3	Mic4/3	25,600	3840		225	9			3		890	136.9	97.3	91.6	658
Panasonic Lumix G100	£590	4 ★	Small SLR-shaped camera specifically designed for vloggers	4/3	20.3	Mic4/3	25,600	3840		49	10			3		270	115.6	82.5	54.2	345
Panasonic Lumix GX880	£400		Tiny easy-to-use pocket camera with tilting screen and 4K video	4/3	16	Mic4/3	25,600	3840		49	5.8			3		210	106.5	64.6	33.3	270
Panasonic Lumix GX9	£699	4 ★	Compact body with tilting screen and viewfinder, and 5-axis stabilisation	4/3	20.3	Mic4/3	25,600	3840		49	9			3		900	124	72.1	46.8	450
Panasonic Lumix GH5 II	£1499	4.5 ★	Video-focused high-end model with in-body stabilisation and 4K video	4/3	20.2	Mic4/3	25,600	4096		225	12			3		410	138.5	98.1	87.4	727
Panasonic Lumix GH5S	£2199		Professional video version of GH5 with 10.2MP multi-aspect sensor	4/3	10.2	Mic4/3	204,800	4096		225	11			3.2		410	138.5	98.1	87.4	660
Panasonic Lumix GH6	£1999	5 ★	Impressive high-end video model with new 25MP sensor and 5.7K recording	4/3	25.2	Mic4/3	25,600	5728		14				3		330	138.4	100.3	99.6	823
Panasonic Lumix S1	£2199	4.5 ★	24MP full-frame mirrorless with exceptional viewfinder	FF	24.2	Leica L	204,800	3840		225	9			3.2		380	148.9	110	96.7	899
Panasonic Lumix S1H	£3600		Specialist full-frame mirrorless model designed for pro-level video	FF	24.2	Leica L	204,800	4096		225	9			3.2		380	151	114.2	110.4	1164
Panasonic Lumix S1R	£3399	4.5 ★	High-resolution full-frame mirrorless with in-body stabilisation	FF	47.3	Leica L	51,200	3840		229	9			3.2		360	148.9	110	96.7	898
Panasonic Lumix S5	£1800	4.5 ★	Compact-bodied, enthusiast-focused model designed for both stills and video	FF	24.2	Leica L	204,800	3840		225	7			3		440	132.6	97.1	81.9	714
Sigma fp	£1999	4 ★	Smallest full-frame mirrorless, but compromised features and handling	FF	24.6	Leica L	102,400	3840		49	18			3.2		280	112.6	69.9	45.3	422
Sigma fp L	£1999	4 ★	High-resolution version of the fp with 61MP full-frame sensor	FF	61.0	Leica L	102,400	3840		49	10			3.2		240	112.6	69.9	45.3	427
Sony Alpha 6000	£670	4.5 ★	A fine camera for its time, but now very much showing its age	APS-C	24	Sony E	25,600	1080		179	11			3		310	120	67	45	344
Sony Alpha 6100	£830		Update to the A6000 with Sony's latest AF technology and 4K video	APS-C	24.2	Sony E	51,200	3840		425	11			3		380	120	66.9	59.4	396
Sony Alpha 6400	£1000	4 ★	Extraordinary new autofocus system, but in an outdated body design	APS-C	24.2	Sony E	102,400	3840		425	11			3		360	120	66.9	49.9	403
Sony Alpha 6600	£1450	4 ★	In-body stabilisation and impressive autofocus, but frustrating body design	APS-C	24.2	Sony E	102,400	3840		425	11			3		720	120	66.9	59	503
Sony Alpha 1	£6500	5 ★	Flagship model with an unprecedented combination of resolution and speed	FF	50.1	Sony E	102,400	7680		759	30			3		530	128.9	96.9	80.8	737
Sony Alpha 7 II	£1498	5 ★	The full-frame Alpha 7 II includes in-body image stabilisation	FF	24.3	Sony E	25,600	1080		117	5			3		350	126.9	95.7	59.7	556
Sony Alpha 7 III	£1999	5 ★	Fine camera with 10fps shooting and 4K video recording	FF	24.2	Sony E	204,800	3840		693	10			3		610	126.9	95.6	73.7	650
Sony Alpha 7 IV	£2400	5 ★	Excellent all-rounder with 33MP sensor and fully articulated screen	FF	33.0	Sony E	204,800	3840		759	10			3		610	131	96.4	79.8	658
Sony Alpha 7C	£1900	3.5 ★	Compact full-frame design let down by poor handling and tiny EVF	FF	24.2	Sony E	204,800	3840		693	10			3		680	124	71.1	59.7	509
Sony Alpha 7R III	£3200	5 ★	Impressive image quality and handling, but starting to look a little dated	FF	42.4	Sony E	102,400	3840		399	10			3		650	126.9	95.6	73.7	657
Sony Alpha 7R IV	£3500	5 ★	Superb high-resolution, full-frame mirrorless with new 61MP sensor	FF	61.0	Sony E	102,400	3840		567	10			3		670	128.9	96.4	77.5	665
Sony Alpha 7S III	£3800	4.5 ★	Huge update gains fully articulated screen and new touch interface	FF	12.1	Sony E	409,600	3840		759	10			3		600	128.9	96.9	80.8	600
Sony Alpha 9 II	£4800		A9 gains professional connectivity options and an improved body design	FF	24.2	Sony E	204,800	3840		693	20			3		500	128.9	96.4	77.5	678
Sony ZV-E10	£680	4 ★	Designed for vlogging, with high-end microphone and fully articulated screen	APS-C	24.2	Sony E	51,200	3840		425	11			3		440	113	64.2	44.7	343

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DSLR cameras			SENSOR SIZE	RESOLUTION (MP)	LENS MOUNT	MAX ISO	VIDEO	MIC INPUT	AF POINTS	BURST MODE (FPS)	VF COVERAGE (%)	BUILT-IN W/FL	FLASH	SCREEN SIZE (IN)	ARTICULATED LCD	TOUCHSCREEN	BATTERY LIFE (SHOTS)	WIDTH (MM)	HEIGHT (MM)	DEPTH (MM)	WEIGHT (G)				
NAME & MODEL	RRP	SCORE	SUMMARY				SHOOTING							SCREEN			DIMENSIONS								
Canon EOS 2000D	£469	3★	Minor update to EOS 1300D gains 24.1MP sensor				APS-C	24.1	Canon EF	12,800	1080	9	3	95	•	3	•	•	500	129	101.3	77.6	475		
Canon EOS 250D	£530	4★	Very compact entry-level DSLR with fully articulated screen and 4K video				APS-C	24.1	Canon EF	51,200	3840	•	9	5	95	•	•	3	•	•	1070	122.4	92.6	69.8	449
Canon EOS 850D	£820	4★	Fully featured upper entry-level DSLR includes 4K video recording				APS-C	24.1	Canon EF	51,200	3840	•	45	7	95	•	•	3	•	•	800	131	102.6	76.2	515
Canon EOS 90D	£1210	4★	Mid-range DSLR boasts 32.5MP sensor, 10fps shooting and 4K video				APS-C	32.5	Canon EF	51,200	3840	•	45	10	100	•	•	3	•	•	1300	140.7	104.8	76.8	701
Canon EOS 6D Mark II	£1999	4.5★	Includes 26.2MP full-frame sensor and fully articulated screen				FF	26.2	Canon EF	102,400	1080	•	45	6.5	98	•	•	3	•	•	1,200	144	110.5	74.8	765
Canon EOS 5D Mark IV	£3599	4.5★	Hugely accomplished workhorse model, but pricey				FF	30.4	Canon EF	102,400	3840	•	61	7	100	•	•	3.2	•	•	900	151	116	76	890
Canon EOS-1D X Mark III	£6499		Super-fast pro model for sports and action photographers				FF	20.1	Canon EF	819,200	5496	•	191	16	100	•	•	3.2	•	•	2,850	158	167.6	82.6	1440
Nikon D3500	£499	4★	Easy-to-use entry-level DSLR with Bluetooth connectivity				DX	24.2	Nikon F	25,600	1080	11	5	95	•	3	•	•	1,550	124	97	69.5	415		
Nikon D5600	£800	4.5★	Excellent image quality and handling, plus Bluetooth connectivity				DX	24.1	Nikon F	25,600	1080	•	39	5	95	•	•	3.2	•	•	970	124	97	78	465
Nikon D7500	£1299	4.5★	Places the excellent sensor from the D500 into a smaller body				DX	20.9	Nikon F	1,640,000	3840	•	51	8	100	•	•	3.2	•	•	950	135.5	104	72.5	720
Nikon D780	£2199	5★	Superb all-rounder blends the best of DSLR and mirrorless technology				FX	24.5	Nikon F	204,800	3840	•	51	7	100	•	•	3.2	•	•	2,060	143.5	115.5	76	840
Nikon D850	£3499	5★	High speed and superb image quality make this the best DSLR yet				FX	45.7	Nikon F	102,400	3840	•	153	7	100	•	•	3.2	•	•	1,840	146	124	78.5	1005
Nikon D5	£5199		Nikon's top-end sports and action model for professionals				FX	20.8	Nikon F	3,280,000	3840	•	153	14	100	•	•	3.2	•	•	3,780	160	158.5	92	1405
Nikon D6	£6299		Latest pro-level high-speed sports camera boasts new AF system				FX	20.8	Nikon F	3,280,000	3840	•	105	14	100	•	•	3.2	•	•	3,580	160	163	92	1450
Pentax K-70	£600	4.5★	Solid performer with fully articulated screen and in-body stabilisation				APS-C	24.2	Pentax K	102,400	1080	11	6	100	•	•	3	•	•	410	125.5	93	74	688	
Pentax KP	£1099	4★	Compact but well-specified DSLR with interchangeable hand-grips				APS-C	24.3	Pentax K	819,200	1080	•	27	7	100	•	•	3	•	•	390	131.5	101	76	703
Pentax K-3 III	£1899	4★	Highly specified but pricey APS-C DSLR that boasts a large viewfinder				APS-C	25.7	Pentax K	1,600,000	3840	•	101	12	100	•	•	3.2	•	•	800	134.5	103.5	73.5	820
Pentax K-1 II	£1799	4.5★	Well-featured full-frame DSLR that's excellent value for money				FF	36	Pentax K	819,200	1080	•	33	4.4	100	•	•	3.2	•	•	670	136.5	110	85.5	1010

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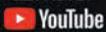
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Compact cameras

NAME & MODEL	RRP	SCORE	SUMMARY	SENSOR SIZE	RESOLUTION (MP)	LENS RANGE (MM EQUIV)	MAX ISO	VIDEO	MIC INPUT	SHOOTING			SCREEN		TOUCHSCREEN	BATTERY LIFE (SHOTS)	WIDTH (MM)	HEIGHT (MM)	DEPTH (MM)	WEIGHT (G)	
										BURST MODE (FPS)	VIEWFINDER	BUILT-IN Wi-Fi	FLASH	SCREEN SIZE (IN)							ARTICULATED
Canon G1 X Mark III	£1149	5 ★	Rewrites the rule book by fitting an APS-C sensor in a compact body	APS-C	24.2	24-72	25,600	1080		9	•	•	•	3in	•	•	200	115	77.9	51.4	399
Canon G3 X	£799	3.5 ★	Long zoom range, but let down by slow shooting and no built-in EVF	1in	20.2	24-600	12,800	1080	•	5.9	•	•	•	3.2in	•	•	300	123.3	76.5	105.3	733
Canon G5 X Mark II	£849	4 ★	Handles well and gives great image quality, but sluggish AF in low light	1in	20.2	24-120	25,600	3840		30	•	•	•	3in	•	•	230	110.9	60.9	46	340
Canon G7 X Mark II	£549	4.5 ★	Pocketable body that handles well, with really useful zoom range	1in	20.1	24-100	12,800	1080		8	•	•	•	3in	•	•	265	105.5	60.9	42	319
Canon G7 X Mark III	£699	4 ★	Lovely pocket camera that includes 4K video and YouTube live streaming	1in	20.1	24-100	25,600	3840	•	30	•	•	•	3in	•	•	265	105.5	60.9	41.4	304
Canon G9 X Mark II	£449	4 ★	Slim, stylish, pocketable camera gives great image quality	1in	20.2	28-84	12,800	1080		8.2	•	•	•	3in	•	•	235	98	57.9	30.8	206
Fujifilm X100V	£1299	5 ★	Classic rangefinder-like camera with tilting screen and weather-sealing	APS-C	26.1	35	51,200	3840	•	20	•	•	•	3in	•	•	420	128	74.8	53.3	478
Leica C-Lux	£875		Customised, re-badged version of the Panasonic TZ200	1in	20.1	24-360	25,000	3840		10	•	•	•	3in	•	•	370	113	67	46	340
Leica D-Lux 7	£1075		Customised, re-badged version of the Panasonic LX100 II	4/3	17	24-75	25,000	3840		11	•	•	•	3in	•	•	340	118	66	64	392
Leica V-Lux 5	£1049		Customised, re-badged version of the Panasonic FZ1000 II	1in	20.1	25-400	25,000	3840	•	12	•	•	•	3in	•	•	440	136.7	97.2	131.5	812
Leica Q2	£4250		Update to the Q with high-resolution sensor and weather-sealed body	FF	47.3	28	50,000	4096		20	•	•	•	3in	•	•	350	130	80	91.9	718
Leica Q2 Monochrom	£4995	5 ★	Variant of the Q2 with a modified sensor that only shoots in black & white	FF	47.3	28	100,000	4096		20	•	•	•	3in	•	•	350	130	80	91.9	734
Panasonic FZ1000 II	£700	4 ★	Updates FZ1000 with higher-resolution, touch-sensitive screen	1in	20.1	25-400	25,600	3840	•	12	•	•	•	3in	•	•	440	136.2	97.2	131.5	810
Panasonic FZ2000	£600	4.5 ★	Sophisticated bridge camera with strong focus on 4K video	1in	20.1	24-480	25,600	3840	•	12	•	•	•	3in	•	•	350	137.6	101.9	134.7	966
Panasonic LX15	£370	4.5 ★	Likeable advanced compact with ultra-fast f/1.4-2.8 zoom lens	1in	20.1	24-72	25,600	3840		10	•	•	•	3in	•	•	260	105.5	60	42	310
Panasonic LX100 II	£600	4.5 ★	Fine camera with Four Thirds sensor, fast lens and analogue controls	4/3	17	24-75	25,600	3840		11	•	•	•	3in	•	•	340	115	66.2	64.2	392
Panasonic TZ100	£350	4.5 ★	Long zoom lens in pocket-sized body makes for a fine travel camera	1in	20.1	25-250	25,600	3840		10	•	•	•	3in	•	•	300	110.5	64.5	44.3	312
Panasonic TZ200	£500	4.5 ★	Huge zoom range for a pocket camera, but telephoto images lack detail	1in	20.1	24-360	25,600	3840		10	•	•	•	3in	•	•	370	111.2	66.4	45.2	340
Ricoh GR III	£799	4 ★	Slimline, lightweight advanced compact with in-body image stabilisation	APS-C	24.2	28	102,400	1920		4	•	•	•	3in	•	•	200	109.4	61.9	33.2	257
Ricoh GR IIIx	£899	4 ★	Variant of the GR III with new 40mm-equivalent f/2.8 lens	APS-C	24.2	40	102,400	1920		4	•	•	•	3in	•	•	200	109.4	61.9	35.2	262
Sony RX0 II	£730		Tough waterproof camera with tilting screen and internal 4K video recording	1in	15.3	24	12,800	3840	•	16	•	•	•	1.5in	•	•	240	59	40.5	35	132
Sony RX10 IV	£1800	5 ★	Update to RX10 III with vastly improved shooting speed and autofocus	1in	20.1	24-600	12,800	3840	•	24	•	•	•	3in	•	•	400	132.5	94	144	1095
Sony RX100 III	£810	5 ★	Features fast f/1.8-2.8 zoom lens and pop-up electronic viewfinder	1in	20.1	24-70	12,800	1920		10	•	•	•	3in	•	•	320	101.6	58.1	41	290
Sony RX100 V	£900	4.5 ★	Includes super-fast 24fps shooting and slow-motion video up to 960fps	1in	20.1	24-70	12,800	3840		24	•	•	•	3in	•	•	220	101.6	58.1	41	299
Sony RX100 VI	£980	4.5 ★	Fantastic pocket travel camera with 24-200mm equivalent f/2.8-4 lens	1in	20.1	24-200	12,800	3840		24	•	•	•	3in	•	•	240	101.6	58.1	42.8	301
Sony RX100 VII	£1200	4.5 ★	Gains Sony's latest AI-based autofocus tech, including real-time eye AF	1in	20.1	24-200	12,800	3840	•	20	•	•	•	3in	•	•	260	101.6	58.1	42.8	302
Sony ZV-1	£700	4 ★	Designed for vloggers, with high-spec mic and fully articulated screen	1in	20.1	25-70	12,800	3840	•	24	•	•	•	3in	•	•	260	105.5	60	43.5	294
NEW Sony ZV-1F	£550		Simplified version of the ZV-1 with fixed 20mm equivalent prime lens	1in	20.1	20	12,800	3840	•	16	•	•	•	3in	•	•	360	105.5	60	46.4	256
Zeiss ZX1	£5400	3 ★	Unique camera with built-in Lightroom Mobile, but awkward touch interface	FF	27.4	35	51,200	3840		3	•	•	•	4.3in	•	•	TBC	142	93	94	837

SONY
ZV-1F
Hands-on review



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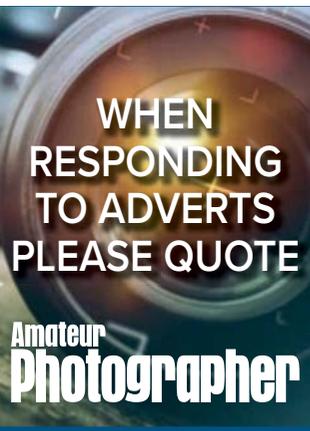
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Final Analysis

Damien Demolder considers...

Talbot Lotus Sunbeam by Russ Wilcox

Our interests are what make us interesting. When we chat it is about things we are interested in, and often the things the other person is interested in. That's what we talk about, where our references come from and what fires our soul. Indeed, our interests make our life interesting – even if only to us. Most of us can be interested in our passions all on our own, but when we meet someone with the same fixations, well, things can really kick off. We make connections, and share our experiences, knowledge and our joy. Making friends with people who have the same preoccupations is easy and comes naturally even when we've never met that person before. At a party we might be told, 'Go and chat to Terry. He's into beekeeping too.' That's all we need – spontaneously we get on like a house on fire.

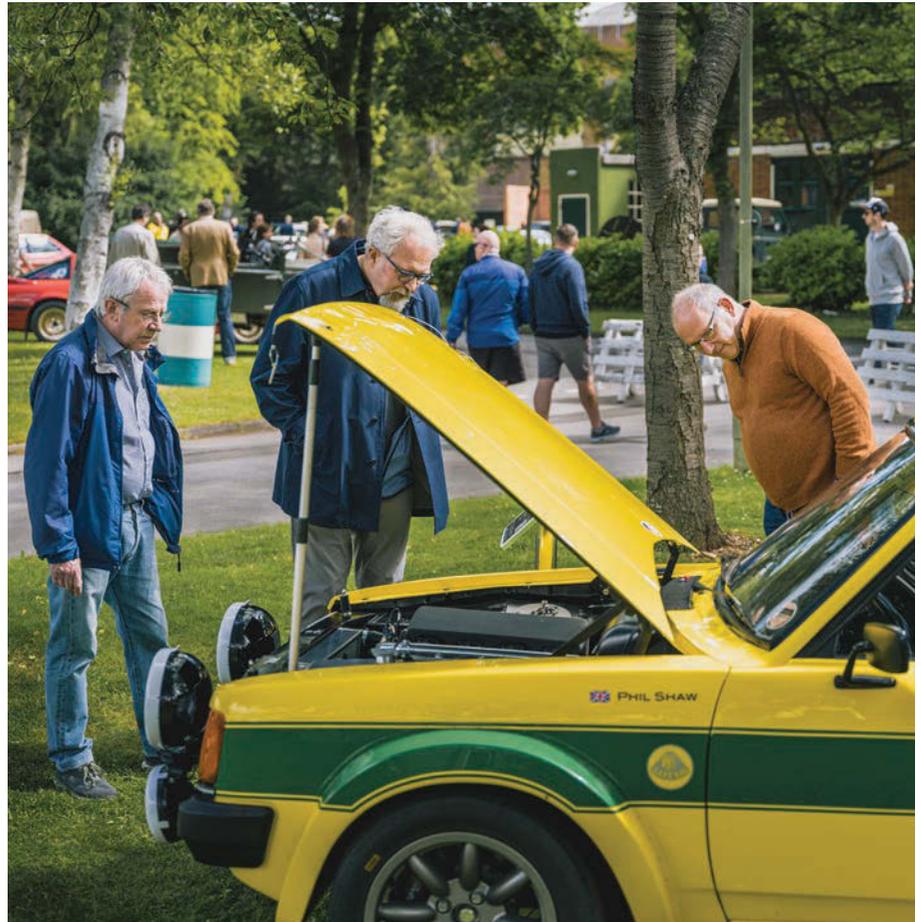
Cool interests

Most people are interested in something, and everyone has their inner nerd however much they tell you they don't. They might admit to being a fan of something, like *EastEnders*, and might be able to name all the landlords of The Queen Vic. Those things, of course, don't make them a geek – just a 'buff'. I might be an 'aficionado' of my very cool interests, but you, I'm afraid, are just dull.

A friend of mine started The Dull Men's Club (now the more inclusive The Dull Club) to celebrate folk who are experts in different types of traffic cones, who photograph roundabouts and who collect manual wooden washing machines.

Ironically the people who make it into the annual calendar are interesting because of their enthusiasm for whatever obsession has been inflicted upon them. They are interesting because they pursue, learn and accumulate knowledge. They have something to say – unlike those who have no or few interests. An enthusiasm, a devotion makes us more powerfully individual.

That is what I love about this masterly photograph by Russ Wilcox – it shows us humans. This is what people are like, this



'I'm sure most other photographers were shooting the cars, but Ross has seen something that runs deep within us all, and made a beautiful picture'

is what life is like, and we can all relate to it in some way or other. I see a yellow car that looks like the front end of a Ford Escort Mark II, but those chaps would scoff and delight in correcting my civilian inabilities to distinguish one car from another. They would be able to tell me (whether I liked it or not) the year it was made, where it was made, the name of the man whose idea it was, the year it won the World Rally Championship for Talbot, who was driving and probably what the

weather was like for every stage in that year of glory.

It takes a connection with humanity to see this kind of shot. I'm sure most other photographers on the day were shooting the cars, but Russ has seen something that runs deep within us all here, and has made a really beautiful picture at the same time. I know nothing about cars, but my passing curiosity for cameras allows me to know exactly how they feel.

Visit: russwilcoxphotography.com



Photographer and journalist Damien Demolder has worked in the photographic publishing industry since 1997 and is the former editor of *Amateur Photographer*. He writes regularly about photography for a number of leading publications and has also been a judge on a number of prestigious international photo competitions. See his website at www.damiendemolder.com

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IMAGE TAKEN BY KIKO ARGASION ON THE X-H2S