CAMERACRAFT

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THE GUILD OF PHOTOGRAPHERS

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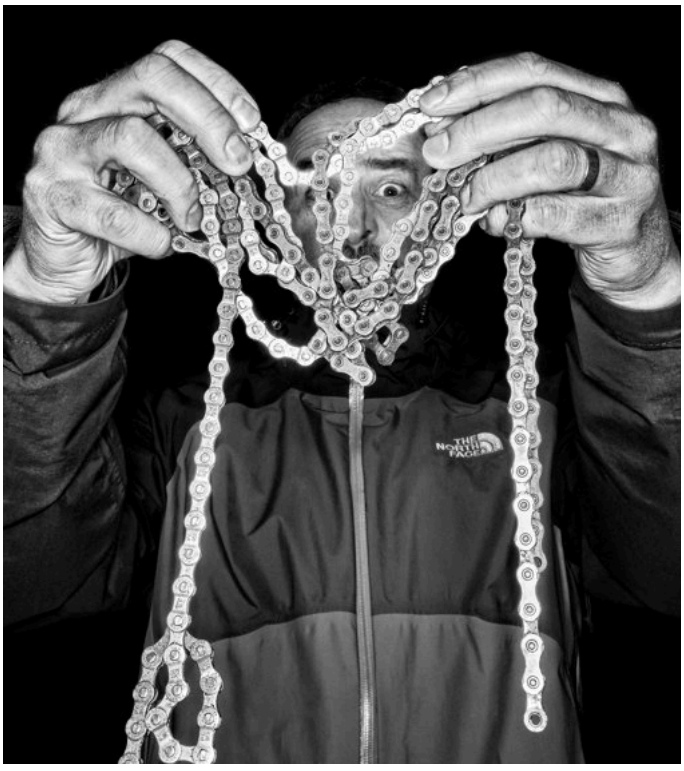

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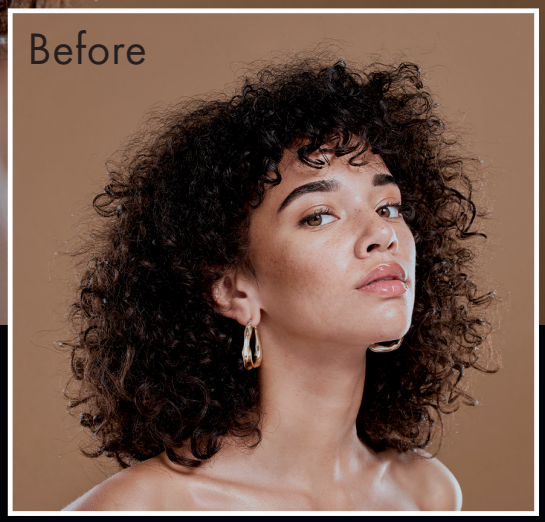

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THE GUILD OF PHOTOGRAPHERS

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NUMBERS count! Well, that was the idea. I set out to put this edition together with Numbers in mind. It didn't take much thinking to realise that from the very start photography has depended on whatever level of maths and measurement existed over the years of its development.

The very first camera lenses were made almost without a design, relying on Newton's *Optics* and the cumulative experience of spectacle, telescope and microscope makers who ground and polished glass by hand. They were lenses for the camera obscura and camera lucida, optical curiosities or aids to drawing. Given Newton's findings, it is surprising that early photographic cameras didn't use concave mirrors… but the glass lens with all its spherical and other aberrations ruled the field in Fox Talbot's Britain and Dageurre's France.

Those aberrations, and the other limits of the lens, were moderated over the course of seventy years with the help of calculations. Herschel, Gauss, Petzval, Rudolph – physicists and workers with numbers. At the same time, the first photographers started with the need to understand and control 'time and temperature' and measurement of chemical components which has lasted for the entire era of silver analogue imaging (not over yet!). If anything the early processes, with emulsions created and coated in field and arcane development using things like mercury heated to release its vapour, needed more grasp of weights and measures than exposure times and apertures.

Today the photographer rarely needs to measure or think hard about numbers, formulae, equations or applied molecular and quantum physics. That's because unbelievably complex and refined calculations and processes, involving mass production of optical and electronic components accurate to a very small fraction of the width of a human hair, have gone into making the digital camera's sensor. The scale of sensor architecture is hard for to envisage – you can not see it, touch it or replicate it. If you planted a field with potatoes, one plant every 50cm in a square grid, to match the number of pixels (each with its lens and colour filter) on a 100 megapixel medium-format sensor that field would need to be 5.824 by 4.368 kilometres – where the sensor is 44 x 33mm. You'd need to cover a typical local football pitch with mosaic tiles 1cm square to match the pixels on a 60 megapixel 24 x 36mm sensor. That approximate… football pitches vary a bit in size!

How has this been achieved?

The answer is fascinatingly self-referencing. It has been achieved using photography itself. From early printed circuit boards made on a process camera to nano-level solid state devices, the tools used to invent today's digital photography were created by analogue photography. It's almost like the AI phenomenon where the ghost in the machine might take command and use the accumulation of human knowledge to evolve the machine itself. Photography has been at the very heart of nearly all the technical advances since the photographic era began, in communications, in computing, in manufacturing.

But in this issue I've chosen simpler things. Like an exhibition with 55 40" prints, a qualification panel with 20 images, a presentation to lay out a series of 15 pictures, the pursuit of gigapixel landscapes, the maths of studio work and lighting – or the appeal of photographing numbers on roads and signs. It's all still about numbers…

– David Kilpatrick, Publisher and Editor

IN THIS ISSUE

Natalie Martin, David Joarnt, Magda Bright, Dennis Russ, Simon Lee Waldram, Gary Friedman, Ian Knaggs, Tom Hill, Tim Goldsmith, David Kilpatrick, Natalie Bays.

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7Artisans launch 9mm full frame wide

THOUGH sample images on their web pages indicate this lens actually has geometric distortion which you will see in many of them, it is claimed to have zero distortion. As the widest prime nominally rectilinear wide angle made for all the major mirrorless systems (E, Z, RF, L) it's under $500 plus shipping and tax but should reach the UK sales operation at a comparable price without those hassles. It focuses down to 20cm, measures 70mm diameter (no filter thread) by 86mm, and weighs 463g. It's an all-metal manual lens with no electronic coupling.

https://7artisans.store/products/9mm-f-5-6-full-frame-wide-angle-lens-for-e-l-r-z

Speed Graphic closes, Novoflex now at MAC group

SPEED GRAPHIC, one of the best-known suppliers of darkroom and studio products in the UK, closed on 29th September with a major close-out sale. Owner David Johnson has found new homes for some of the lines notably **Novoflex**, which has now been taken on by MAC Group of Wolverhampton:

https://www.macgroupeu.com

The recommended alternative sources for films and chemistry are:
Morco – **https://www.morco.uk.com**
Process Supplies (London – **https://www.processuk.net**
AG Photographic – **https://www.ag-photolab.co.uk**
Firstcall Photographic – **https://www.firstcall-photographic.co.uk**

Elinchrom FIVE gets companion THREE model

ELINCHROM has launched the THREE a slim battery mono 261Ws head with a full power recycling time of 1.2 second, 525 full-power flashes on a full charge from any USB-C source, which can also handle shooting while charging. A bi-colour continuous LED light tackles modelling and video. It's compact and light at 1.6kg, and takes Profoto light shapers as well as Elinchrom using a supplied adaptor. HSS sync to 1/8000s and TTL with manual lock an be controlled directly by via Bluetooth using Elinchrom App without the need for the Elinchrom Bridge. The Elinchrom THREE costs £979.00 inc VAT from The Flash Centre and dealers.

https://www.theflashcentre.com

Sony A7CII and R and new 16-35 GM II

TWO NEW Alpha 7C Series bodies and a new 16-35mm ƒ2.8 G-master lens have hit the market from Sony.

Alpha 7C II offers 33MP (like A7IV) with ISO from 100 to 51200 for both still images and movies (expanded ISO 50 to 204800 for still images and the same AI-processing unit as the A7R V.

Alpha 7C R has a 61MP sensor with no lo-pass filter and shares both this and its processor with the A7R V. In other respects the models resemble the A7C but with an added front control wheel *(see the top view above)*. They have the same relatively low resolution and magnification EVFs, however, and an upgrade to this would have been very desirable.

The Sony FE 16-35mm ƒ2.8 GM II is claimed to be the world's smallest and lightest high-resolution ƒ2.8 wide-angle zoom. It measures 87.8 x 115mm, takes 82mm filters and weighs 547g.

The prices are: Alpha 7C R, £3,200; Alpha 7C II, £2,100; FE 16-35mm ƒ2.8 GM II £2,400.

https://www.sony.co.uk

Tiny Canon RF 10-20mm full framer

WEIGHING 570g, the new Canon RF 10-20mm ƒ4L IS STM is less than half the weight (610g lighter) and 2cm smaller in width and length than the EF 11-24mm ƒ4L USM. The new lens paired with an EOS R8 weighs less than the older EF lens alone, despite offering a wider angle of view and IS. Dustproof and waterproof, it is the first L series lens to feature STM motor and full time manual focus capability, thanks to compact lightweight focus group

The RF 10-20mm F4L IS STM lens is priced at £2579.99

https://www.canon.co.uk

Tamron 100-500 for Nikon Z

TRANSCONTINENTA UK Ltd has announced that the 150-500mm ƒ5-6.7 Di III VC VXD (Model A057) is now available in full-frame Nikon Z-mount. The recommended retail price will be £1249.99.

https://www.tamron.co.uk

New photo bookshop and gallery opens in Edinburgh

A HOME FOR PHOTOGRAPHY is the name for a new bookshop, gallery, film sales and printmaking hub which opened its doors on Edinburgh's William Street at the end of October. We met Robin Gillanders (of Studies in Photography, the excellent publication of the Scottish Society for the History of Photography) as the West End shop was being fitted out by SSHoP jointly with Agitate, a collective of young photographers and students with a track record from their Haymarket Terrace space. There will be no darkroom, as Stills in Edinburgh and Street Level in Glasgow offer this. But where Stills stages just three exhibitions a year, No 6 William Street will have one a month. The venture is initially supported by private benefactors only and staffed by volunteers, and has needed to finance the initial stock of books. As secondhand books will be offered, Cameracraft has donated a number and we hope to drop in with more in future. The print room has an Epson 7800, Edinburgh's A&M photolab helping with future exhibitions, and the joint venture hopes to secure funding to employ one or two young staff to look after its two floors with five rooms. These will give space for talks and meetings. *For further info, see* **https://studiesinphotography.com** *and* **https://agitate.gallery**

PhotoTEQ acquires Just Limited to clean up in photo accessories

PHOTOTEQ LIMITED has acquired the business of Just Limited, Peter Brogden's specialist company familiar from many exhibitions over the years. Peter is retiring but remaining in the wings and will no doubt be seen again by many readers who have met him and benefited from his knowledge. Established in 2006, Just is established as the leading authority in digital sensor cleaning and film cleaning, with their own Just brand as well as Dust Aid, Dust Patrol, Photosol, Kinetronics, Camera protection easyCover and camera carrying solutions from b-grip. PhotoTEQ Limited, founded by former Minolta and Sony executive Paul Genge, represents Newell power solutions, Spudz lens cloths, Alpine Innovations and KiCA JetFan 2.

See: **https://www.phototeq.com**

PUT THE DATES IN YOUR DIARY NOW!

NOW IN ITS 21ST YEAR!

The Societies of Photographers
Convention 2024
& London Photo Show

Full Convention:
Wednesday 17 – Saturday 20 January
FREE* Trade Show Dates:
Thursday 18 – Saturday 20 January
Venue: Novotel London West
Hammersmith, W6 8DR

TAKE YOUR PHOTOGRAPHY TO THE NEXT LEVEL

Europe's Largest 'All-Welcome' Photographic Convention

The 2024 Convention is a veritable feast of education, with four days of action packed programmes designed to help you put your imagery ahead of the game. The three day Trade Show spanning the Thursday to Saturday is a gathering of the who's who in the photographic industry, with the 'big guns' present and eager to show you the latest in technology and design.

REGISTER TODAY FOR YOUR FREE TRADE SHOW TICKETS.*

FREE to enter Trade Show* Meet over 100 photographic brands – All the important players within the industry are exhibiting at this event, so meet the key personnel who can help you. Book your **FREE*** trade show tickets today.

Scan me to register

Trade Show Opening Times
Thursday 18th January 2024 – 10:00–17:00
Friday 19th January 2024 – 10:00–17:00
Saturday 20th January 2024 – 10:00–16:00

Masterclasses ★ Don't miss out on the chance to start off the year with inspiration from some of the world's best photographers.

YOU CAN ATTEND THE FULL 4 DAY MASTERCLASS PROGRAMME FOR JUST £275.

Masterclass Tickets:
Day Pass £80 | 4 Day Full Pass £275
All prices shown are inclusive of booking fee & VAT.

150 hours of Masterclasses have been confirmed from over 70 speakers!

Superclasses If you are looking for a more hands-on experience without having to fight the crowds, the Superclasses are for you. Limited to just 15 delegates these informative and educational workshops will enhance your Convention experience.

Business School - Wednesday 17 January

Take your business to the next level – step by step! The Societies' Business School has created an amazing reputation. All delegates who attend leave with a wealth of information to plough straight back into their businesses. The theme of the Business School in 2024 is business development and growth – how to best manage your business with creativity being the consistent thread that runs through the programme. The school will be hosted and steered by Gillian Devine, one the most motivational speakers and one who has a great reputation for designing and influencing some of the most successful businesses within our industry. This highly-focused power-packed business school has been designed to bring you successful professional photographers who have taken their business to the next level. They will share with you their thoughts and secrets of their business.

FREE TO WATCH 20x16" Print Competition & Qualifications Live at the Convention Join us on Wednesday 17th and Thursday 18th January and experience the live judging for yourself.

Enter the most prestigious 20×16" Print Competition held worldwide, open to members and non-members alike. Enter your images today **thesocieties.net/convention/20x16-print-competition/**

Presentation Evening Friday 19 January
Join us at the glittering Awards Night and celebrate the success of photographers from around the world. The **FREE to enter members' 2023 Monthly Image Competition**, 2024 20×16" Print competition and Trade Awards winners will be announced at a glamorous awards ceremony.

USE EXCLUSIVE ONLINE CODE CC10 & SAVE 10% OFF ALL TICKETS!
Get 20% off Masterclass tickets by becoming a member of the The Societies of Photographers, from just £6.25 a month. Start your 2-month free trial Pro Membership today > thesocieties.net/try/

thesocieties.net/convention/

The Societies of Photographers

***Visitors pre-register before 1 Jan 2024 for FREE and avoid £10 entry fee to Trade Show.**

Industry set for January 17th-20th London Photo Video Convention and Trade Show

BIG EXHIBITORS like Sony and Canon (above) join a programme of free talks and demonstrations at the Hammersmith Novotel for the 2024 Convention. The latest photo equipment, products and services will be on show, with demonstrations from leading manufacturers on their products. "All the major players in the industry will be exhibiting, so it's a good opportunity to meet the key personnel behind the latest photography equipment", say the organisers. Over a hundred brands will be there with many offering exclusive show deals.

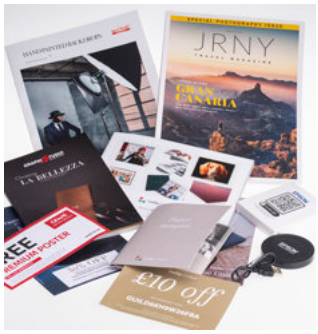
On the Wednesday 17th the event opens with the Societies' Convention, and on the 19th hosts their awards evening. You can buy Masterclass day passes (£80) to pick and mix from larger audience classes *(below)*, or pay £275 for all four days. Fourteen different small group workshops *(15 maximum, right)* are called Superclasses and are separately priced at £175 each. There's also a new Business School programme. Everything can now be seen and booked on the website.

The free Trade Show, which includes the Live Stage, opening times are:

Thursday 18th 10:00-17:00
Friday 19th 10:00-17:00
Saturday 20th 10:00-16:00
Free Seminars and Demos

New for 2024 – check out The Judging Room.
https://thesocieties.net/convention

Photohubs delivers the good(ie)s...



TWO PHOTOHUBS training and trade show days in September, in Oxfordshire and Scotland, featured worthwhile goodie bags for those registering even just for the open lectures and demonstrations covered by a £12.50 fee. The bags with a value of around £90 included the camera care kit above from Wilkinson Photographic along with the premium JRNY magazine, vouchers for free and reduced price products from labs, a wireless charge pad from EPSON, and more. In Scotland demonstrations included Ian Knaggs with a great talk on photographing bottles (above left) and Paul Wilkinson seen (above right) with Graphistudio's Miranda Walton as his portrait subject. The Joker enjoying a post-show visit to the Peebles Hydro hotel bar was the cosplay subject provided by Photography Session Days at both events. The next Photohubs events and show will be at the Guild Awards, February 2nd/3rd 2024 at the Doubletree Hilton, Stoke-on-Trent.
To be kept informed check: **https://photohubs.photoguild.co.uk**

Photo curator to head Scottish galleries

SCOTTISH National Galleries have appointed Anne Lyden, formerly their International Photography Curator then Chief Curator of Photography, as their first female Director General. After 18 years with the J Paul Getty Museum in Los Angeles, Anne joined the National Galleries in 2013. She succeeds Sir John Leighton who steps down after 17 years in the role in December.
https://nationalgalleries.org
Photograph by Laura Prieto

THE GUILD OF PHOTOGRAPHERS

STANDARD MEMBER

£10.75 a month, £28.25 quarterly or £99.00 annually.

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• Guild private members' network and personal support

• Monthly competitions

• Bi-monthly Creative Light online magazine, Cameracraft mailed to you bi-monthly, and regular email newsletters

• Guild webinar library now includes dozens of brilliant new Zoom webinars, created specially for members during Covid-19 restrictions and recorded

• Use of Guild logos

• Free downloads (e.g. contracts)

PROFESSIONAL MEMBER

£13.25 a month, £35.75 quarterly £129.00 annually

Includes all standard features plus the following great business-class additions:

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• Contract dispute and mediation cover

• Loss of earnings protection

• Tax Investigation protection (worth £150)

• Personal access to a confidential Legal Advice helpline available 24/7

• Personal access to a confidential Tax Advice helpline

• 'Crisis cover' – 24/7 access to PR expert advice with up to £10,000 to tackle negative publicity or media attention

• Compliance and Regulation (including Data Protection) cover

• Employment Protection

• Free access to a Business legal services website with over 100 documents to assist you with day-to-day business

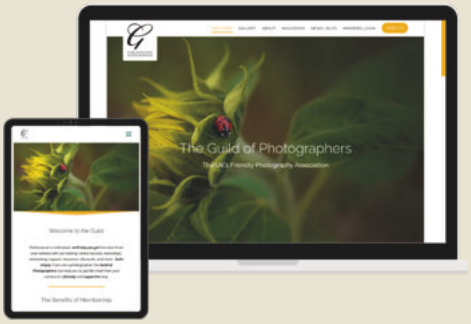
• Up to £10,000 worth of PR support if the PR helpline feels the situation needs it

• Plus much more, including legal costs and expenses cover in the case of identity theft, and legal defence against any motoring prosecutions

Some of these features are also available to members outside the UK – the Guild office will be happy to advise. All for just £2.50 a month extra!

To join the Guild now visit: **https://www.photoguild.co.uk**

The Guild's website ***photoguild.co.uk*** *has full information of the benefits of joining and links to all the activities an services offered.* ***photohubs.co.uk*** *is the event-staging arm of the Guild.*



Guild Trade Partners offering membership benefits

Trade discounts/offers are subject to change

ALAMY
The leading online photographic library for stock images. Guild members earn the first £500 commission free. *https://www.alamy.com*

APPLESTORE
Save up to 10% in store or online, as well as on refurbs and offers. *www.apple.com/uk*

CEWE
The largest European producer of photobooks is now available in the UK pro market. Guild members get an exclusive 20% off any CEWE photobook and wall art. *https://www.cewe-photoworld.com*

DATACOLOR SPYDER
Computer display colour calibration solutions. Guild members receive 20% savings. *https://www.spyder.datacolor.com*

DIGITALAB
Digitalab deliver high quality printing, frames, albums and presentation products. Guild members – 50% OFF any sample products. *https://www.digitalab.co.uk*

EPSON
One of the largest manufacturers of printers, projectors and much more. *https://www.epson.co.uk*

GRAPHISTUDIO
Handmade wedding albums, books and prints. *https://www.graphistudio.com*

GURUSHOTS
Join the daily photo challenges, improve your photography and get rewarded. *https://www.gurushots.com*

HANDPAINTED BACKDROPS
Suppliers of stunning bespoke made backdrops, discounted for members. *https://handpaintedbackdrops.co.uk/*

HAHNEMÜHLE FINEART
The oldest paper company in Europe that lives and breathes paper. 10% discount for Guild members. *https://www.hahnemuehle.com*

HANDEPAY
Guaranteed savings on card processing fees. Discounted quotes for Guild members. *https://www.handepay.co.uk*

INFOCUS PHOTOGRAPHY INSURANCE
Unique savings for Guild members with this highly respected insurance company. *https://www.infocusinsurance.co.uk*

LOUPEDECK
10% off THE Photo and Video Editing Console for photographers and videographers, for faster and more creative editing. *https://www.loupedeck.com*

LOXLEY COLOUR
Scottish professional imaging lab with a worldwide reputation. *https://www.loxleycolour.com*

nPHOTO
Special deal exclusively for Guild members of up to 60% discount. *https://www.nphoto.co.uk*

ONE VISION IMAGING – 30% OFF FIRST ORDER
30% discount off your first order, and special offers for Guild members. *https://www.onevisionimaging.com*

PIXSY – ACT AGAINST COPYRIGHT INFRINGEMENTS
Special Guild Member offer worth £350 a year. *https://www.pixsy.com*

PHANTOM FLIGHT DRONE SCHOOL
Brilliant Guild discounts of up to 20% off Drone courses, lessons and holidays. *https://www.phantomflightdroneschool.co.uk*

PHOTO-SENSORY
A new pre-school education service which offers five different class types. Guild members can be official photographers to these. *Contact Guild HQ.*

SIM IMAGING
Guild Member only discount 10%. *https://www.simlab.co.uk*

UK PRINTED PENS
Special discount for Guild members of 20%. *https://www.ukprintedpens.co.uk*

VISION MEDIA DESIGN UK
Websites that work for you. Guild members save £95 on all websites. *https://www.creativedesignagency.uk*

WILKINSON CAMERAS
Large range of photographic equipment and Guild member's exclusive retail offers. *https://www.wilkinson.co.uk*

3XM
Guild Members receive double points on every product order. *https://www.3XMsolutions.com*

TOM HILL

Numbers of pictures and pictures of numbers…

Route 1, the California Coastal Highway – and a lesser known New York quayside numbering. Top, the city's famous streets always attract photographs which show just signs.

Tom Hill is a travel writer, copywriter and sometime photographer living in the Scottish Borders in the UK. He can be contacted via his website at ***bigfrogsmallpond.co.uk***

Imagine the scene, a 1970s family living room, Sunday afternoon, curtains drawn against the light, everyone has a cuppa and they're all seated around – cooing over Vera's Kodak slides of a recent trip to the Lake District and the Fylde Coast.

"And here's one of our Alf in front of Blackpool Tower…"

The Family Slide Show, for high teas and holidays only. You might even have stretched to a glass of Double Diamond or a Harvey's Bristol Cream.

Some readers might be of an age from when they remember the slide projector and the collapsible screen, constructed like a roller blind, which sprung back into a grey metal tube, taken out and assembled for those special occasions.

There were, of course, dozens of different makes of projector. A very popular high end amateur and office marque was the Kodak Carousel with its circular magazine that held up to 80 35mm mounted transparencies. For many families, 80 slides would be an annual, if not bi-annual production rate. One carousel for each year might sit in in its own sacred cardboard box in the loft.

But the point of all this reminiscence about the bad (or good, depending on your outlook) old days of amateur photography, from, say, 1970 until the advent of digital capture, is to make you think about the costs involved in making photographs back then, on transparency or print. It becomes quickly obvious why people didn't take anywhere near as many photos as they do now.

A lot of bread

For keen amateurs and slide-show lovers, a roll of 36 exposure Kodachrome in the early 1970s was around £2.00. In the UK, that cost included processing, mounting and return postage.

That's five and a half pence each time you hit the shutter button. In 1972, A loaf of bread cost 9p and the average weekly wage was around £35.00. Income tax was 30% and there was no personal allowance, so take home pay for many would be around £25.00. Shooting a roll of Kodachrome was therefore equivalent to about 8% of your weekly income. It's hardly surprising that people were more 'considered' before pressing the shutter release button, whether that was on a Nikon F or a Kodak Instamatic.

And it wasn't only slides that cost a packet. Even 36 exposure rolls of Kodacolor-X film in the 70s weren't cheap – 89p for 36, and one of the best mail-order lab prices around was Wallace Heaton, charging 40p to develop the film plus 10p per print; £4 total for 36 prints. That's 16% of your take home pay, or 44 loaves of bread!

Hosepipe syndrome.

I saw a post on Facebook the other day, where a young woman appealed for help from her friends because the SD card on her SLR camera was full, but she didn't know what to do. In fact, it turned out she didn't know there was a card at all. She had just Wi-Fi transferred the images after each session onto her laptop but had no awareness of a storage medium on the camera- it was as if the photos just sat there by way of some sort of dark magic. It turned out she had several thousand .jpg images she knew nothing about – betraying a 'snap happy' attitude of the first order.

Friends also tell me of the time they've lent cameras to teenagers for them to take pictures on a day out. The card or cloud storage fills up in an afternoon. I call it 'hosepipe shutter button syndrome'. This is why the numbers of pictures we take has spiralled out of control, the cost per image is zero to the user, or perhaps £5 per month in cloud storage fees – but consider the huge amount of electricity that is gobbled-up the world over in uploading and constantly downloading these images and videos to and from half a dozen social media platforms' server farms. The daily megawattage must be in the realms of a small country's consumption at the least.

Two's company

As an antidote to hosepipe photography culture, there's an amusing (possibly apocryphal) tale of famous theatre and celebrity portraitist Angus McBean, who apparently shot a front cover for *Vogue* magazine on a monorail camera in the 1950s. The image was to be of several leading actresses and models in a tableau which took months to arrange, as all the participants had to come to London from several different countries.

Having set up the lights and props, McBean gave a few cursory instructions to the subjects, shot a photo, replaced the dark slide sheath, flipped the film around in the view camera, moved a couple of people and lights, then took a second shot.

Angus then started to dismantle the set and thanked everyone for coming. The representative from *Vogue* was shocked and asked McBean why he'd only taken two pictures.

"How many photos of this scene do you intend to use on the magazine's front cover?" asked Angus.

"Just the one, I suppose", came the reply.

"That's what I thought, so I took two, to give you a choice…"

It goes to show that there's a genuine skill in 'capturing the moment' instead of shooting burst photos on a phone at 15 frames per second.

A tree at either end

To give some idea of how many photos the average person in the UK took only, say, 40 years ago, I remember working for a main Kodak lab in Bridgend, S Wales, in the late 1980s. They took on seasonal staff from the end of November until late January to cope with the Christmas rush of portrait enlargements, printed mugs, t-shirts and jigsaws. The film processing requirements spiked threefold from the summer. The general manager of the lab once told me that a typical roll of 24 or 36 C41 film depicted a Christmas tree in frames 1–3, then a load of beach snaps from Spain, then an office party, then another Christmas tree from the following year – a 56-week period from one Xmas tree to another. Imagine that level of photographic activity on a person's camera phone nowadays.

Pictures of Numbers

For street photographers, there are those magical numbers mostly found on signposts, road signs and inner-city wall graffiti. Numbers are used to assign names to famous roads, which earns them a certain romantic kudos. *A1: The Great North Road* was a seminal photography book by Paul Graham, published in 1983. Would the publication have sold so many if the road had been labelled, say, the A26?

The NC500 is a 500-mile road trip around the Scottish coast from north of Glasgow up the west coast to John o' Groats and back down the east coast to Fife. It has become a mecca for photographers in camper vans, but if it had been called 'the coastal driving loop of Scotland' would that have the same ring to it?

As a result, people photograph those famous road and street signs: New York's West 33rd or 42nd Streets; Pacific Highway 1, stretching 656 miles from Northern California to just south of Los Angeles; Route 66 of course, 2500 miles from Chicago to Santa Monica.

In the outback of Australia, there is (or was in the late 1990s) an informal system used by the postal service to sheep stations in the middle of nowhere. Disused fridges or ramshackle roadside containers, often old wardrobes or broken plastic 'dunny huts' simply had a number sprayed on them, such as 'Bag 18'. That was the ranch's 'makeshift' address: 'Bruce Holden, Bag 18, Eyre Highway'. These mail drop containers were left at the intersection of the main roads, but the ranch itself might be a further 100 km down a dirt track somewhere.

All these roadside numbers and Americana such as the mileposts of ribbon highways across deserts and mountains carry a special romance. They remind me of something about life's journey never being finished. And, of course, one's journey through the medium of photography should never end.

Look out for news of Tom's forthcoming book in these pages.

Above, words and numbers on the road in Oregon. Below, two souvenirs of the Scottish NC500 – heilan' coo and Ardvreck Castle, Loch Assynt.

Natalie Martin
2 Wheels 55 Pictures

A warehouse full of large prints formed an exhibition display in the village of Innerleithen when Scotland hosted the International Cycling Championships. It's former hub of the tweed textile industry – now humming with the hubs of mountain bike wheels.

Earlier this year, Scotland became the epicentre of the biking universe when Glasgow had the honour of hosting the UCI World Championships. While much of the action took place within the city, the real pulse of mountain biking was beating in Glentress Forest and the village of Innerleithen.

Innerleithen, a place once recognised for its wool industry with Ballantyne Cashmere and Murray Allan as the mainstay employers, has seen a dramatic transformation. Gone are the days when Scottish Borders were at the forefront of woollen knitwear; a new era has dawned. Innerleithen has transformed into one of the finest mountain biking destinations.

The once somber town is now brimming with a renewed spirit. Hotels, cafes, pubs, retail shops, and local grocers are all thriving, catering to thousands of tourists every week. Bike shops, repair services, and other new enterprises, such as a craft brewery, have sprung up, embracing a flourishing economy. The former Ballantyne cashmere mill now stands as the headquarters of an exciting new organisation for Innovation in Mountain Biking, a symbol of Innerleithen's resurgence.

Evan Oliphant, above with his sons and below right: "I have been involved in cycling most of my life and have grown up with biking as part of what I do. It started as a hobby, then became my profession, first as a rider and now as a coach". Below left, Suzi Park: "Mountain biking for me is part of everyday life. I love guiding people round the trails here and every time I get on my bike, I feel a connection with nature and the outdoors."

Local photographer and Innerleithen native, Natalie Martin, has captured this transformation through her lens. Over the past two years, she has been working on a series of photographs that showcase the faces and stories of those who have contributed to the village's mountain bike community. The result was a stunning exhibition of 55 large-scale portraits, featured during the UCI championships. Attracting over 1,300 visitors from 14 countries, this fringe event was a monumental success.

Though best known as one of Scotland's top wedding photographers and a multiple award winner, Natalie's fearless style in portraiture is also highly regarded. Her acclaim, both within and beyond the UK, is testimony to her elevated craft, even after shooting for less than a decade.

Natalie's passion for photography seems to run in the family, as she is the daughter of our regular contributor, Kenneth Martin. The exhibition, commissioned by the local community enterprise 'The HUB' commenced with a simple setup in Natalie's garden during lockdown. The ensuing large prints, suspended expertly, created an immersive experience for visitors, leading to an overwhelming

Dave Cotter of Caddon Creative: "I work from home, meaning a great proportion of my life is spent in and around the town. I really enjoy working with local businesses and have been involved in a number of projects that involve mountain biking and other sports and activities based in the Tweed Valley." Below left, Murray Charters: "When we moved to Innerleithen and I started mountain biking 30 years ago, there were no trails. Now, almost everyone I speak to knows where we are". Below right, Jim Greig: "I learned to ride a bike when I was seven years old. At 12 years old, I started working at Renwick's grocery shop after school and at weekends where I was paid three half-crowns a week. I delivered the messages on a grocer's bike, as well as papers and milk."

response filled with positive and emotional reactions. Plans for a commemorative book are now in the making.

The exhibition wasn't merely a showcase of images but a confluence of stories and memories. It united the community, connected strangers, and even moved some to tears. The private viewing on the first day allowed the subjects to witness the finished work for the first time, reinforcing photography as a powerful historical medium. This collection stands as a lasting tribute to a small village rekindled in the love of sport.

Natalie, along with her father, is embarking on a new series of joint portraits, culminating in an exhibition planned for April 2024. This collaboration remains tantalisingly under wraps, but it is undoubtedly another exciting chapter in Natalie's artistic journey and Innerleithen's fascinating transformation.

Innerleithen's story is one of revitalisation, passion, and community. Through the wheels of mountain bikes and her lens, it's a story now etched into the annals of sporting and cultural history. This exhibition not only celebrates the remarkable renaissance of a village but also the profound power of art and sport to inspire and connect.

Ema Perry and Craig Anderson, No.1 Café: "The MTB and Roadie communities have been the backbone of our business from the start at No.1 Cafe. Hungry riders need good quality fuel and Ema and I are passionate about supplying great coffee, fabulous food and a wide range of homemade cakes." Below, Kathleen "Kat" Henderson and Boost: "In the summer of 2019, I suffered a life-changing mountain bike accident in the French Alps. I am now paralysed from the waist down but I have worked tirelessly to get back into the hills. Biking has always been a huge part of who I am, but now it is more important than ever. My new adapted bike has returned some of my freedom to me. Being able to ride in the hills with friends brings me happiness and calm. Even better, I now have my special trail dog, Boost, by my side."

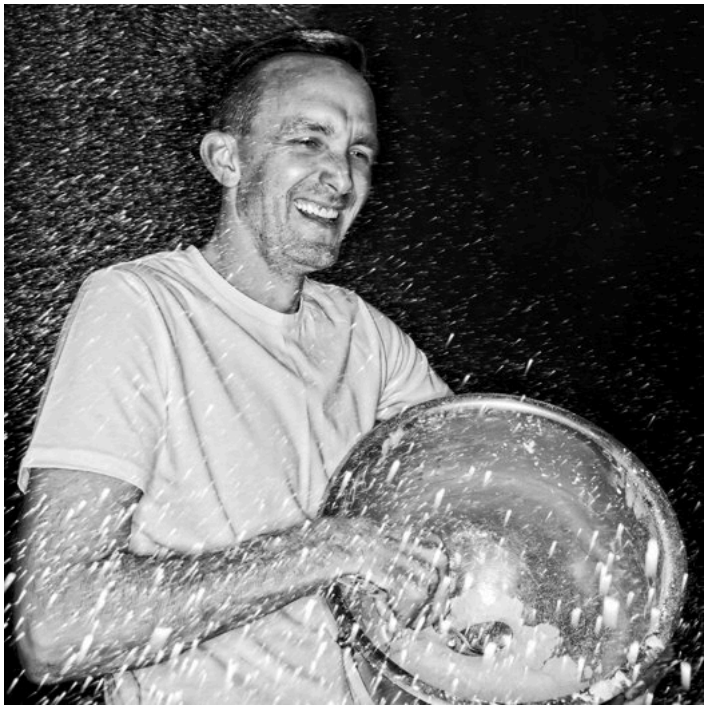
How it call came together

Natalie says: "I started the project in lockdown in my garden in 2020. I then finished the project, photographing more people we had missed or people new to our town, in July 2023 just weeks before the actual event. Over the two sittings in 2020 and 2023 it took me around ten days of photographing the subjects and many many hours of editing. I had time in lockdown so quite enjoyed doing that. In 2023 for the last sittings there was much more pressure as I only had days to get them edited and sent to the printers.

"I used a green/blue pop-up background just large enough to fit four people at the most. I could easily switch the colour of the background depending what I wanted and what suited the sitter and the scene.

"I shot the first set in 2020 (around 60 portraits) on my Canon 6D with 24-105mm lens with a ring flash on-camera plus my Elinchrom

Rachel Lauder of The Flower Bee: "I'm so grateful to have grown up and opened my wee flower shop in Innerleithen. It's an unbelievably supportive community and over the last couple of years, the High Street has become a really bustling wee place and somewhere people choose to come and spend their time and money, instead of just passing straight through. Whether you're a local popping out for your groceries, a biker looking for a quick repair, or a visitor just having a browse, there's a little something for everyone! A great town, in a beautiful valley." Below, two brothers in a triptych – left, Graeme Forrest: "Biking has been a massive part of my life since the end of primary school. It's in my blood. Growing up in the Borders was the perfect place to start biking, with hills everywhere you turn. It's not just a hobby, it's a way of life. I've been able to meet many people from all over the world. There's no greater feeling than bunny hopping over rocks or weaving between trees going flat-out down the trails. Right, Gary Forrest: "I'm 36 and I've been riding and racing bikes for 25 years. Me, my brother and a few pals started riding and quickly got hooked as we lived in the perfect location with a great mix of trails. We started racing all around the UK, I started doing well in competitions, then racing internationally in everything from World Cup downhill races to the Enduro World Series."



Top left, John Adam, baker: "From leaving school at 16 to become an apprentice baker, to celebrating 20 years of John Adam Bakery this year, I have seen the biking community being an integral part of our town. Finishing a shift in the bakery then enjoying being out on the trails –here on my doorstep – is something I know I'm lucky to have. Top right, Gareth Easton: "A Glaswegian by birth, I moved to Innerleithen in the summer of 2004. In June 2022, I opened 'Pie', an artisan savoury pie bakery." Lower Left, Catherine Maxwell Stuart: "I was born and brought up at Traquair House and have spent the greater part of my life in this wonderful valley. I am passionate about our local community and bringing visitors to experience the area. It has been so exciting to see how cycling has transformed the town in recent years, without destroying its character and history." Above, the scale of the exhibition printed by Loxley can be seen from this shot of the industrial environment with bike and visitors. Below, Natalie Martin photographing Lady Catherine with the green pop-up screen background as described in the story.

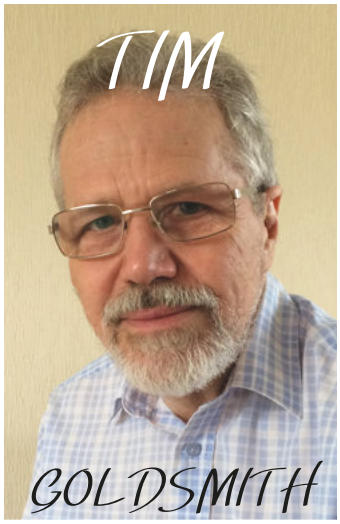
See: https://www.nataliemartin.photography

lights and the exposure was always ƒ16 at ISO 100, sync speed 1/250s. In 2023, for around 50 sitters, I used my Canon R6 MkII camera with the ring flash and Profoto heads and my ring flash, at exactly the same settings.

"The event was organised by the HUB CIC who came to me with the idea in lockdown and it progressed from there. I could not have done this exhibition without the help and support of Pauline, Carmel, Dave, Suzanne and George. This social enterprise also secured us funding from our local community council to be able to pay for the show including all the large prints which cost around £6,000.

"I am an Ambassador for Loxley Colour of Cumbernauld in Glasgow and they produced 55 beautiful large 40 inch prints mounted on board 10mm foam. They were amazing! They have a lovely gloss finish to them and looked great in the industrial setting of an old World War 2 Foodstore Warehouse.

"Over 100 people featured in the portraits, some solo and others with several in the shot. Each person let me note down a write-up about them, which went next to their print. They looked great with these stories next to them, but for this feature the captions are short versions to fit the magazine space."



The numbers game: model numbers, serial numbers, abundance and rarity

From working in a central London studio to marketing manager at Paterson and full time camera dealer, Tim Goldsmith is now a self-employed photographic auction consultant. He is Chairman of the Photographic Collectors Club of Great Britain (PCCGB) and a member of the Stereoscopic Society. You can reach him at info@cameravalues.com or on Facebook as Monark Cameras https://www.monarkcameras.com

There is something about numbers and dates that seems to appeal to a wide range of collectors – from the kid in the 1950s collecting numbers from the side of a steam loco or bus, to the cricket buff looking to fill the 1916 gap in their run of *Wisden Cricketer's Almanacks*. When it comes to cameras and lenses however, there is nothing a collector likes more than finding all the models in a range, but it can sometimes be confusing to see how the model numbers ran in the first place.

Back in the Spring of 1959, Nikon launched their iconic professional F model. It lasted through to 1971, when it was finally superseded by, logically, the Nikon F2. There then followed other professional Nikon cameras, the F3, the autofocus F4, before coming back to the F5 and F6 film cameras. The F100 sits on the fence between the Nikon professional and enthusiast ranges, but for consumer grade Nikon film cameras, the progression of model numbers is not so easy to follow. For instance, in the UK, we had the F301, F401, F501, F601 and F801, but no F701. The F90 sat in the middle of the Nikon range as a top-end enthusiast camera and as a back-up for the pro photographer.

After Canon launched their professional F1 the up-dated version was the New F-1 but, depending on the specification, they used a bewildering mix of names and/or numbers for their general models. The 1960 Canonflex R2000 was mostly the same as the original Canonflex, but now with a top shutter speed of 1/2000s. Soon after came the Canon FTb, FTbn and the EX, then the A-1 and AE-1 models. At least when Canon launched the full-spec PowerShot digital compact camera range they called the first one the G1 and followed it on with the G2, G3 etc right up to the PowerShot G16 in 2013. After this model the sensor size increased, along with several other upgrades, and Canon reverted to G1 but now with an X suffix. And so it continues.

As if camera model names and numbers were not confusing enough, working out the actual quantity made of a specific model can be really frustrating. Leica fans have it easy as just by looking up the serial number of their camera in one of the many printed or on-line resources, they can easily find out the exact model, the year it was made and even how many were in that batch. The Leica list starts from camera number 100 (earlier numbers were prototypes and sample cameras) and all their numbers run consecutively from there. The very first, hand-written lists even still exist in their archives. That's German efficiency for you.

Compass cameras, 100 years old, serial numbers 2223 and 2224 - see story.

Of course, once you know how many cameras of a type were made, you know how rare, or how common, an example might be. Several years ago I was offered the research papers from the estate of a contact who had been trying to write the definitive history of the Reid & Sigrist company in Leicester. At the end of WWII they 'liberated' the Leica plans from the Leitz factory and set about (and barely succeeded) in making their own copy, called the Reid. Sadly the company didn't keep very good records and any they did keep are long gone. But by making a note of as many Reid serial numbers as I can find (currently over 500 at *http://www.monarkcameras.com/Reid Serial Numbers.htm*) and extrapolating from those I have, I think I can say that over the eight or so years they were in the business hey made less than 3,000 cameras across four models. The serial number X4 prototype has, as my photo shows, a hinged opening back unlike Leicas of the time.

Serial numbers can also be interesting when you get an unusual number, like one ending in a run of zeros, or with the same number repeated numerous times. Recently, at the photographic auction I help run, we sold what appeared to be two prototype Olympus Zuiko lenses, one for large format and the other for medium format (seen left, photos courtesy Chiswick Auctions). Surprisingly, each lens was numbered 100001 but we assumed they were in fact the first (possibly only) lenses of this type that Olympus made. Each sold for around £1,500. Obviously, consecutively numbered cameras are not common, especially if the cameras are rare models.

What were the chances then that, over all my years of collecting, I have ended up with two rare Compass cameras, each now almost 100 years old, and with serial numbers of 2223 and 2224, and which came to me some ten years apart?

A rare Reid – the prototype, Serial No X4

PIXEL MILLIONAIRE

A hundred shots on a hundred megapixel camera might seem to be overkill, but for former precision engineer David Joarnt it could be the way to ensure even the largest multi-shot HDR panorama prints have detail you can put under a magnifier.

In his road trips from his Oregon base, David Joarnt covers many miles on foot with his dog to reach sought-after landscape locations like The Wave near Page in Arizona, finding wildlife and nature along the way.

We came across his work when the black and white conversion stood out despite the small scale of display on social media. Selling his work on-line and in finished wall print form at art fairs, he shoots from the start to allow super-size prints. Visit the Las Vegas gallery of one of the top photographers in the US landscape genre, Peter Lik, and it is easy to know why – size sells, and many of Lik's large prints in the past were enlarged well beyond the capabilities of his cameras or scanning. Joarnt has progressed from multi-shot stitching on his Canon R5 kit to investing in a Fujifilm GFX100s, which with its 11,264 pixel wide output breaks through the 10,000 barrier needed for a 40 inch print as sharp as the repros you see throughout this magazine. While the pictures on this page are multi-shot HDR panoramas using the Canon and size up to almost 11,000 pixels wide, when he acquired his GFX with 20-35mm lens in mid-September he headed out for a location much closer to his Hillsbro home to shoot his other favourite subject, a mountain forest waterfall. That, when you turn the page, is an 18,648 wide multi-shot pan which at 9,234 pixels high can be printed pretty much twice as wide – a 490 megapixel file. "This place was a good test to see what

The Wave, a formation on the Paria Plateau accessible only by lottery and limited to 65 visitors a day. Despite this, and having to avoid the presence of other visitors in his shots, David took over 500 images to create 30-shot HDR panoramas, using his Canon R5 and 11-24mm lens at 11mm.

the 100mp Fuji GFX100s and the 20-35mm lens could do for resolution", he says "It is a ten-shot 50 exposure ±3 stop HDR panorama. I am definitely hooked on this camera, it blows my Canon R5 out of the water." But he's gone as high as a 1.2 gigapixel 21,236 pixel long panorama with the Canon. Where will the GFX take him?

He's not just aiming for the potential to cover someone's entire wall or shopfront with a landscape which can print nearly 12 feet long at mural resolution of 150dpi. The Canon R5 also has a place for his wildlife captures, mostly taken with the 600mm Canon EF ƒ4L IS III USM many adding the 1.4X extender for an 840mm ƒ5.6 combination. The red fox catching mice under snow was shot with this, 1/4000s at ƒ8 and ISO 320. The snowy egret was 1/4000s at ƒ6.3, ISO 1600, no converter. The wild horse was at a mere 167mm and 1/500s at ƒ8, ISO 1600, using his RF 100-500mm ƒ4.5-7.1 L IS USM.

He's a dedicated hiker to remote slot canyons, using the required services of guides from the nations which govern access, and often walking many miles with his cameras and tripod.

On the facing page is Cardiac Canyon, near Page, and top left is the Dragon formation in the same canyon. He's been turned back by rising waters and even a canyon blocked by a dead cow, but managed to squeeze through Little Wild Horse Canyon *(left)* despite his backpack and photo gear.

Sometimes he's lucky with wildlife during his rockier expeditions, as with a 20-shot high speed 840mm lens sequence of a big horn sheep and lamb leaping near Arizona's Salt River, where the wild horses can also be found. Just two frames are shown above.

David makes his smaller prints, and mounts them, using a Canon ProGRAF 300 printer capable of 13 x 30" output. You can find out how his entry in medium format shooting pans out – look for him on *Facebook* (david.joarnt) or find his Smugmug galleries at **https://www.davidjoarnt.com**

–DK

SEEING THE LIGHT

My newborn photography career started about eight years ago and I joined the Guild of Photographers shortly after that. I trained in this specialised field with Claire Elliott and had several mentoring sessions with her. Under Claire's guidance I applied for my Guild Qualification panel, which I passed successfully in February 2017.

I have been entering their Image of the Month since I joined, with varying degrees of success and many tantrums each time the results were announced until I eventually started to receive Bronze Awards in 2017. Claire encouraged me to work on my Craftsman panel then, but I never felt quite ready for it.

It took me another five years with a few false starts and many failed ideas in between. I always felt that I needed to produce dark, painterly looking images and that this was 'what The Guild judges liked'. I did manage to produce an image that received my first newborn Silver in 2021.

The same year I made it into Top Ten Newborn Photographers, a great surprise which spurred me on to work even harder. I felt I was still finding my style and during Covid I watched all the available webinars and Zooms, took notes, worked on my skills and by 2022 I finally felt that I had found what defined my images as mine. I feel confident shooting on light backgrounds and

When you're going for a qualification and need to get your image count up to 20 for a panel, the layout – used for judging – is critical. Magda Bright's beautifully designed 'light look' newborn presentation, seen below as submitted, gained her Master Craftsman status

the images I started producing and entering into the competition finally felt like they were "me".

I received nine Silver Awards and consistent High Bronzes or Bronzes and did well in the overall annual awards, which are based on the record achiever over the ten months of entry. I finally felt ready to create a Craftsman Panel and started my mentoring with Jo Bradley, with whom I had a few feedback and mentoring sessions with previously.

The panel

It all started with an idea of creating an art gallery display of images. I feel that every baby is completely unique, a masterpiece in their parents' eyes, and deserves to be portrayed that way. I certainly felt that way about my own children and could have looked at their gorgeous faces all day long when they were tiny and sleeping in my arms.

I always strive to create images that reflect the fact that every single baby is special and flawless. I try to vary images even if it is only a little bit because I don't want to produce the exact same image for each parent who comes to my studio. All the clothes, accessories and settings are real and so are the poses and expressions of the babies. They are not composites produced in *Photoshop*, they are in-camera shots with adjustments in raw processing.

I love creating and planning and I do a little happy dance in my mind when I see an idea come to fruition on the back of the camera. I started by sourcing golden gilded frames from local charity and antique shops or eBay and worked on creating my 'dark' panel. I shot a series of images on a dark background and placed them into the frames – this is done in *Photoshop*. They looked good, but this style was not me. To stay true to myself I needed to go back to light colours and light images. Part of my inspiration came from a wall my nan had in her house where she displayed various white frames with images in them: I remember being intrigued by these as a child. There was a square, oval and rectangle frame formation and I wanted my frames to look similar. I went back and forth weighing up this decision, discussing it at length with my mentor Jo who suggested I should try the light images and see how I felt. To the delight of my husband I got him a weekend job of assisting me in re-spraying my frames white and I shot the whole set of frames again! I had to learn how to cut out and create layer masks and shadows in *Photoshop* and ended up paying for a lesson to teach me to do just that. I am glad I did, as it furthered my editing skills and I picked up many useful tips. Ensuring the frames were all aligned, similar in size and exposed correctly was a challenge but I managed to make them all look right in the end.

The next step was working out a layout of a pattern that would work with the shapes of the frames as well as the images that would be placed inside them. I spent many sleepless nights arranging these in my mind and cursed myself for setting myself such a challenge. As I was back to my style of light images I was able to use several of my Silver and even my very first Gold Awarded image to make up the panel of twenty needed for the judging. As soon as I created the first draft of the panel I knew I made the right decision.

The inspiration to include an empty bowl image with the feathers and tiny wings stems from my own and many of my customers' and friends' experiences that not all babies we carry are meant for this

world. It felt important to me to include an image remembering all these babies in my panel.

Creating the final order and arrangement of the series was definitely challenging and I often felt I had pushed myself too far past my knowledge and boundaries of what I can do. I am glad I decided to push myself outside of my comfort zone and that I started over and created a panel with white frames and light images as it is a panel I am well and truly proud of and it is one that reflects my work and style.

It had been a project that puzzled my brain for months. It helped me to learn new skills and finesse my photography even further. I can say with certainty that taking the plunge to create a Craftsman panel has been the right decision at the right time for me. I do feel that creating my panel and taking part in the monthly competition have been challenging and also rewarding.

This drive to gain my Craftsmanship – never dreaming that the judges would deem it worthy of upgrading to Master Craftsman status – has pushed me to refine my style, to look at finer details whilst I am shooting. I do so for every single image I create, not just for ones I am planning to enter into awards – in fact I rarely shoot specifically for competition, and all the images shown in the qualifications panel are customer images created during a newborn session.

Being part of the Guild of Photographers has helped me become the best photographer I can be (and I am still pushing myself and learning to be better).

– Magda Bright

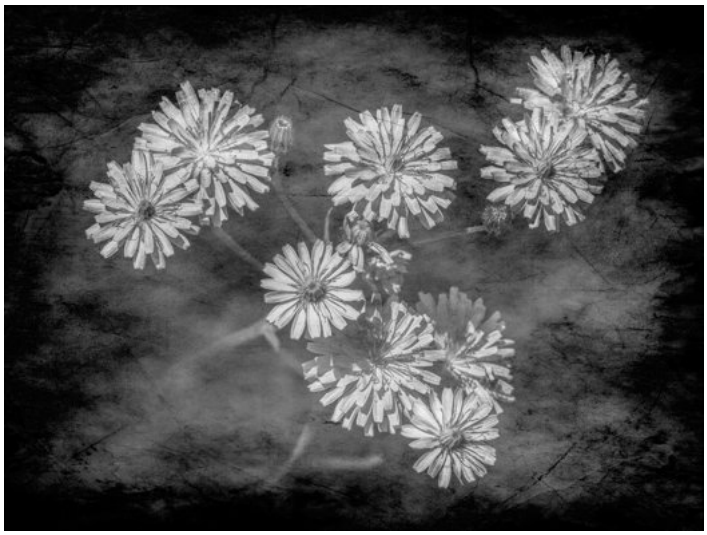
Magda Bright is based in Sutton, Surrey. Her website is: **magdabrightphotography.co.uk** *and you can find her on Facebook, Instagram and Linkedin.*

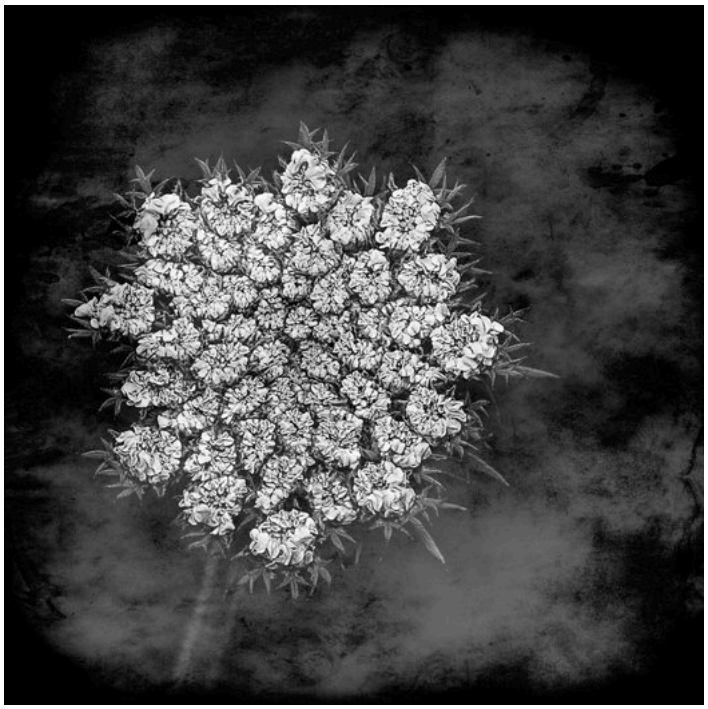
Magda's photographs here were taken using a Sony A7III with 28-75mm f2.8 Tamron lens. The lighting was Elinchrom D-Lite with 150cm octa softbox. Magda used backgrounds from Graceland Design, and outfits, props, headbands and more from many suppliers but gives The Original Photoblocks and Dream Away Designs a special mention.

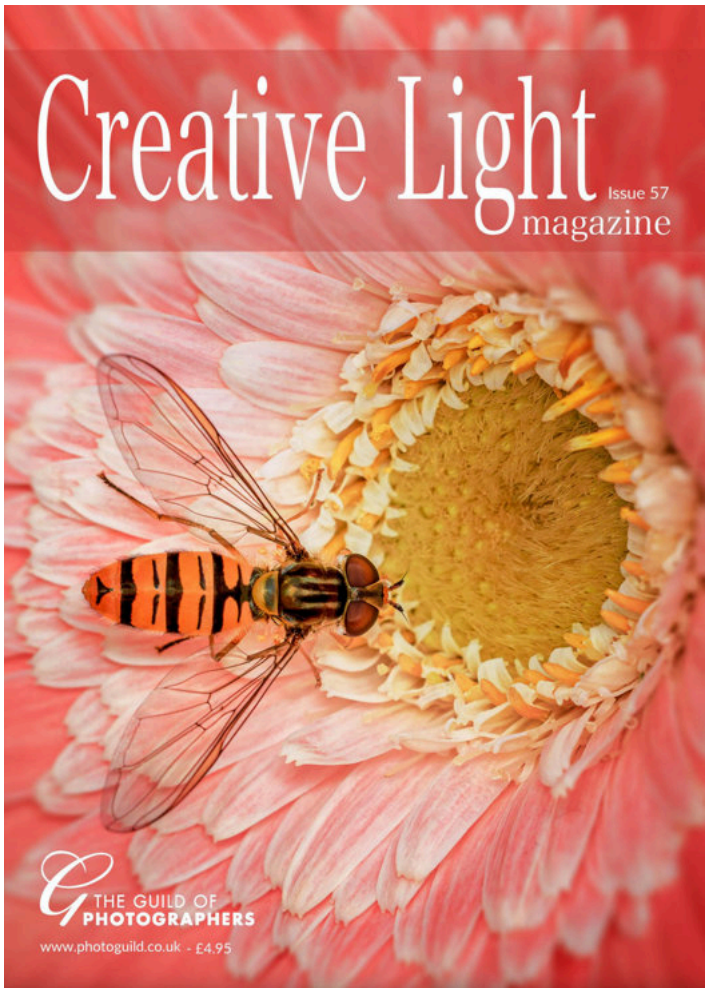
Following a recipe – flowers and flour…

Dennis Russ is a dedicated user of OM-Systems (formerly Olympus and still that way for his choice of camera bodies). Very active in his South Wales camera club circles, and recently circulated a project to show how a panel of 15 related images could be created. He converted his table-top flower studies (on black) to mono and shot 'white powder' on black card to make a texture overlay to create a unified look, tested on the series to gauge opinions. Some preferred plain black, but the feedback helped him pick which shots worked best in the series.

We found Dennis's set of images when considering the question of numbers of prints and how to sequence them or arrange them for an exhibition or qualification judging. Dennis's layout above resulted from feedback from Les Loosemore to an initial layout of three rows of five. Dennis is a club judge for the Welsh Photographic Federation and you can find his website at:
https://www.dennisrussuk.com







Free to read online – Creative Light bi-monthly e-magazine – https://tinyurl.com/guildCL

FIRST LOOK

Fujifilm GFX100 II, GF 30mm ƒ5.6 T/S and 120 macro

One benefit of attending something like the Guild's Photohubs events is that the supporting trade may have far more time to show you things of interest than you'll ever get from a national mega-show, or a visit to a dealer. At Peebles in September Fujifilm's product specialist Carol Hartfree had brought along a full set of Fujifilm X bodies and lenses, including not only the APS-C range but also the GFX medium format models. I was able to look at, and briefly try out without depriving others of the chance, the new GFX100 II and one of the new lenses, the GF 30mm ƒ5.6 T/S (tilt-shift). We also had a good look at the new 55mm ƒ1.7 (strikingly good Face/Eye recognition and AF tracking) and took test shots with the existing GF 120mm ƒ4 Macro LM OIS WR as the 110mm ƒ5.6 T/S Macro was not yet to hand.The new sensor in this 100 megapixel body has 8-stop stabilisation, and this macro lens also optical stabilisation as required by the earlier GFX bodies. Though limited to half life size, IS makes a big difference to macro work, and so does the ability to use high ISO settings without a visible noise penalty. That's something the GFX100 II will do effortlessly.

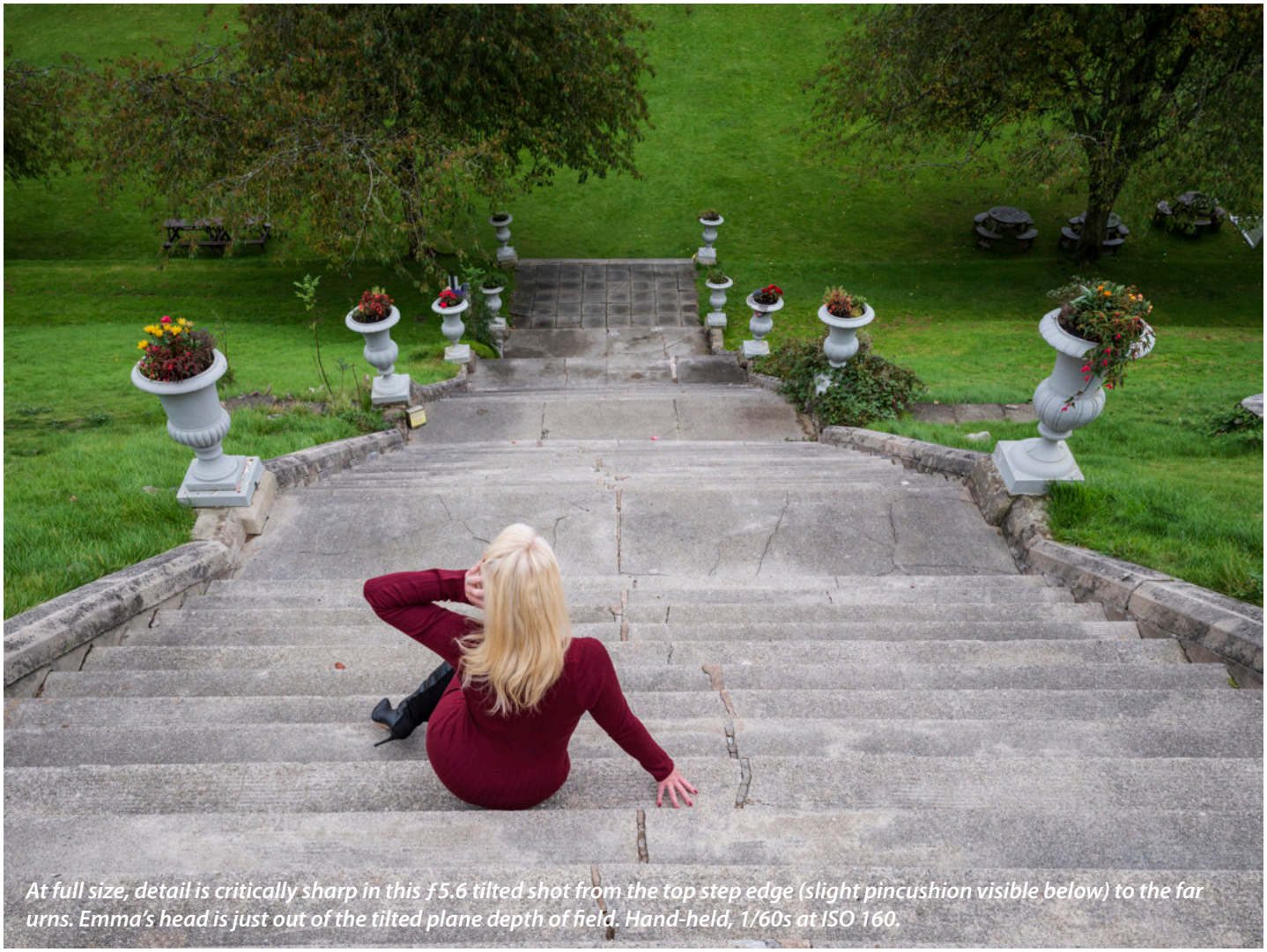
It's too easy to forget this is probably the first really affordable hybrid medium format camera at £6,999 for the body. You can spend many tens of thousands on an Arriflex Alexa 65 to get a modern digital equivalent of the classic 65mm and 70mm film cinematography formats, and you will have Fujinon lenses – rebuilt to Arri's blueprint, of course, but Fujinons nevertheless. Or you shoot movies on the GFX100 II using its exceptional stabilisation, advanced F-Log2 profile to handle a 14-stop dynamic range for post-pro colour grading, and opt for either the standard general purpose Fujinon series or the company high-end ciné Premista and Cabrio zooms. It has special recording modes for using anamorphic lenses on 35mm full frame, with de-squeeze monitoring in-camera, and also shooting directly to widescreen formats including Ciné 8K 2.35:1 which uses the full width of the 43.8 x 32.9mm sensor.

The combination of a vast range of recording formats, frame rates, crops, bit depth and codecs with internal recording to CF Express B card, full HDMI output with Atomos recording, Ethernet connection and USB-C with support for external SSD makes the GFX100 II unchallenged in the motion picture field but affordable for commercial photographers wanting to try this market.

The £3,899 30mm T/S lens might seem irrelevant for movie work but it's not. Apart from the rather hackneyed use of tilt for 'small world' focus effects, shift can be used with low or high camera positions to change the horizon line relative to the subject. It's a little explored movie take as the hardware to do this has not been available, but imagine the classic cowboy or 'American shot' with the hero given stature by a near ground level viewpoint, close and wide-angle, but with the added impact of shift. Of course, T/S lenses are not autofocus but nor is much pro movie shooting. The rest of us can enjoy the rendering and depth of field associated with 70mm cinema, with highly responsive and intelligent AF.

However, the still photographer – nearly all this magazine's readers – will most value 100MP at 8fps, or completely blackout-free at 5.3fps (up to 8.7fps in 35mm full frame crop mode which is a useful 60MP). This combines with what has to be the best EVF ever seen – 9.44 million pixels, mounted via a special hot shoe with the ability to add a tilting adaptor. The rear screen is a more standard 2.3 million dot but has three-way articulation for portrait and landscape use, and touch functions including 'tap the subject' one-touch instant AF tracking. There are so many refined functions present in this camera that the settings alone would take an entire issue of this magazine to analyse – six (C1-C6) memory recall positions on the left hand PASM mode dial, plus dedicated movie and still modes, should remove any need for menu diving during shoots. There's a very

The rear screen tilts, pulls out and flips for portrait orientation just as with the higher end APS-C Fujifilm X models. Right, half life size macro, past its best at the end of September and retouched to remove brown marks. 120mm GF macro, 1/1100 at ƒ8 (wind movement frozen), ISO 800.



At full size, detail is critically sharp in this ƒ5.6 tilted shot from the top step edge (slight pincushion visible below) to the far urns. Emma's head is just out of the tilted plane depth of field. Hand-held, 1/60s at ISO 160.

Top: testing the tilt function of the 30mm to coincide with the plane of the Peebles Hydro steps. Guild member Emma Finch (who runs Photography Session Days, sessiondays.co.uk) kindly agreed to be a figure in the composition. Above, maximum 15mm shift (rise) on a very difficult subject (weather, cars, cones!) brings a level horizon almost to the bottom of the frame, one step back and the slope with those steps was behind me.

good video review by Wilkinson Photographic (who were also exhibiting at the event) and a comprehensive website from Fujifilm devoted to this camera. It really hurt to write this report and realise how much was missed in a short hands-on and how transformative working with it would be.

– David Kilpatrick

Fujifilm site: https://fujifilm-x.com/global/products/cameras/gfx100-ii/
Wilkinson video: https://www.youtube.com/watch?v=iCGLMH6KWW0

Seen in the hotel foyer (they have their own distillery) and shot hand-held with the 120mm macro, 1/50s at ƒ6.4, ISO 1600 – no shake, no noise problem.

Sigma E 10-18mm ƒ2.8 DC DN Contemporary

When Konica Minolta and Sony offered an 11-18mm ƒ4.5-5.6 for A-mount APS-C, Sigma went one better with a 10-20mm ƒ4-5.6 and followed it up with a faster constant aperture ƒ3.5. In E-mount, there's been a Sony 10-18mm from the very beginning. An ƒ4 design, it attracted fans when the system went full frame because like so many ultrawide zooms it enlarged the whole image circle at longer focal lengths. That lens works well at around 13-14mm on full frame.

Now Sigma has introduced a 10-18mm E-mount APS-C, but it's even faster at ƒ2.8 constant aperture and surprisingly small with a 67mm filter thread. It is equivalent to a 15-27mm full frame in angle of view. It's a very neat and solid lens, with a new type of bayonet lens hood that just needs pushing home and turning a mere touch to lock on. While this works well, it's also prone to detach when changing lenses if gripping the 10-18mm and hood together.

However, it is with the hood removed that the lens proves to have similar qualities to Sony's original 10-18mm but with its best FF coverage at 12 to 12.3mm. It only just covers, with very dark corners and a complex distortion wave combined with dramatic vignetting which can be used to effect or partly corrected using Adobe's Manual lens correction adjustments. However the distortion is much less than the 2010 Sony design. Study the hotel shots taken at 18mm, 14mm and 10mm relying on the built-in lens profile plus a fourth example corrected architecturally using Adobe *Camera Raw* Optics and Geometry controls. The settings were +35 Distortion, 130% scale and use of vertical and horizontal manual guides to remove the converging verticals and slight horizon levelling error.

The larger example above was taken on full frame after disabling Auto APS-C crop at 12.2mm and ƒ8.

The 10-18mm is a neat and well designed lens, with a new lens hood quick attachment bayonet (above) and a firm solid metal mount.

18mm – cars and street furniture in the way, left; 14mm, right, just cars.

10mm, close enough to cut foreground. Right, with ACR distortion correction.

At 12.2mm on full frame, using only the built-in correction profile.

This seems to be optimum. This final larger 12.2mm full frame of the hotel only uses the built-in correction because of the way the barrel to pincushion balance shifts when the intended APS-C crop is exceeded. With many subjects what distortion remains doesn't matter. Of course you can also crop an excellent square format or 4:5 ratio from this unintentionally good performance. It even performs well at ƒ2.8 with softer corners. It will not match Sony's 12-24mm FE GM designed for full frame but that costs £2,500 and is huge and heavy. Even their ƒ4 G model is £1,400 and weighs over twice as much. Both have deep curved front elements and filter-unfriendly fixed petal hoods.

The Sigma's sharpness over its focal length range at ƒ2.8 is well up to 60MP standard, and unlike past generations of much slower lenses covering a similar range there's no chromatic fringe problem. Centring is bang-on and as usual with mirrorless systems the quiet, fast stepping motor nails AF despite the depth of field – and it has minimal focus breathing, for video work.

The 10-18mm also focuses insanely close as the red Anthurium spathe at ƒ11 with sunstar, and the full aperture rose both show on the facing page. The lens focuses to 11.6cm and 1:4 scale at 10mm. Removing the lens hood was vital as the lens rim was in contact with parts of the plants. At 18mm, the minimum focus is 19.1cm and the subject scale 1:6.9, as is typical with lenses like this.

Musicians Alan Veitch and Andy Smith and the sign for the charity staging this concert are all within the useful depth of field at 18mm and `ƒ2.8, 1/125s at ISO 8000. Top right, at 18mm the built-in profile corrected geometry is excellent, as the shoreline horizon shows.

The lens has a firm metal mount, a smooth coated semi-matt black finish and the ribbed grips of the very smooth zoom ring and fly-by-wire focus (nearest to the camera body) are part of the metal not rubber sleeves. It weighs only 260g despite this, and at 72.2 x 62mm without the hood is the most compact of its kind. In addition to the Sony mount tested here, it comes in L-mount and Fujfilm X-mount. All are identically priced at £599 including VAT, and the official date for availability was October 26th so it should be in stock now.

– DK

https://www.sigmauk.com

Spittal Beach, Berwick-on-Tweed, at 18mm, ƒ7.1, 1/125s at ISO 100, processed using a reduced Vibrance colour look. All examples on Sony A7IV.

Sigma for Fujfilm X-mount – 23mm ƒ1.4 DC DN & 100-400mm ƒ5-6.3 DG DN OS

It might seem a waste of effort to try out new Fujfilm X-mount lenses on anything less than the latest high resolution professional bodies. We asked Natalie Bays, an enthusiastic user of a vintage (!) Fujfilm X-M1 as well as a new X100V, to take the new 100-400mm stabilised Sigma and fast 23mm for a spin.

Rationale? The X100V is her everyday, everywhere camera and the X-M1 has been neglected with its useful 16-50mm ƒ3.5-5.6 OIS zoom as the 23mm ƒ2 of the X100V is better if you can move round and compose well with the fixed angle of view. The 16-50mm still doesn't really provide ultra-wide or very useful telephoto range. Though Natalie likes the optical viewfinder of the X100V, she told us she is very used to composing on a screen, like anyone using a smartphone has to be. The X-M1 has an excellent rear screen – it is still a current model on sale at under £400 with the 16-50mm – and the chance to try a very long tele zoom without the cost, size and weight of Fujifilm's own 100-400mm was worth taking up.

The 23mm was left with her for a week to see whether her usual street photography hunting grounds in Edinburgh could show how it compared with the same

focal length on the X100V. Since she wouldn't normally even use the wide open ƒ2 on that, trying out the ƒ1.4 of the Sigma was a challenge and the usual ƒ8 choice was made for some shots from the hip or rapidly framed. But ƒ1.4 was also tried out.

For the 100-400mm, which is a full frame lens despite being made in X-mount which only enables APS-C shooting, a visit to Five Sisters Zoo near Livingston coincided with a dreech and drizzly day of variable poor to bad light. This really taxed the focusing abilities of the long lens on this consumer level body, so on reviewing Natalie's raw files it was a surprise to see that when there was not a clear problem like an obstruction or rapidly moving target the AF was spot-on right down to preferring a sharp lock on an eye when visible.

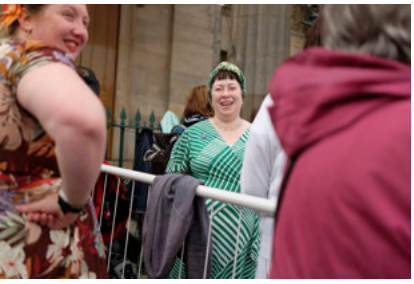
Since many subjects in a zoo are behind wire fences, one of the valuable qualities of the 100-400mm especially wide open at the long end was its ability to 'lose' nearby fence wires completely, with them so far out of the depth of field the worst impact could be a slight change of tone and loss of critical sharpness. Many shots were captured through the clear spaces in the larger wire mesh, though often this meant cropping down from the already limited 16MP. The white wolf portrait is an example printed here from a 6.1 megapixel crop, well under half the full image, and prints on the facing page at a little over 300dpi after using Adobe *Camera Raw* AI Enhance Super Resolution.

The high sharpness of the lens and the quality of the Fujifilm sensor made this practical with Adobe's AI *Camera Raw* 'Enhance'. This sensor responds well to the

The 100-400mm was used in light rain without problems. The full frame of the wolf shows where the green fencing passes directly through the eyes. Local adjustment of density and colour tint in Adobe Camera Raw corrected this enough to be almost invisible in the final image . 211mm, 1/60s at ƒ5.6, ISO 640.

Below, with no obstructions in the way, the 100-400mm's close focusing of 1.12m at 100mm to 1.6m at 400mm meant that subjects like this were not out of AF range. This was at 237mm and ƒ6.3, 1/120s at ISO 200.

The shallow depth of field of the 100-400mm enabled an original view of the Corsac fox safe from Scottish weather – but also plenty of of outdoor shots.
The lioness was just free of impeding wire mesh in the shot below, and the Sigma delivered excellent stabilisation at 400mm for a hand-held 1/60s at full aperture. This is essential with composing on the rear screen of a camera without an EVF or sensor-based stabilisation when using a relatively large and heavy long tele lens.



Natalie normally shoots on Fujifilm X100V in black and white, but with a raw file. On the X-M1 the raw file for this 23mm ƒ1.4 shot is seen above processed using the Adobe 'Camera' Fujichrome Provia profile. The screen shot shows a first stage of local adjustment masking tackled on Mac Studio Max with BenQ 32" screen by the editor, burning in distracting lighter tones in exactly the same way this would be done under the enlarger lens – result right.

Observed at the outdoor Lindy Hop dancing to jazz outside the National Gallery of Scotland, which takes place on most Saturdays at lunch time. The ACR conversion used Adobe's BW12 profile, with the shadows restored to a deeper black. The focus on the further woman's face at ƒ1.4 is perfect and the wide aperture helps moderate the very busy scene. The black and white conversion and local adjustments complete the post-processing.

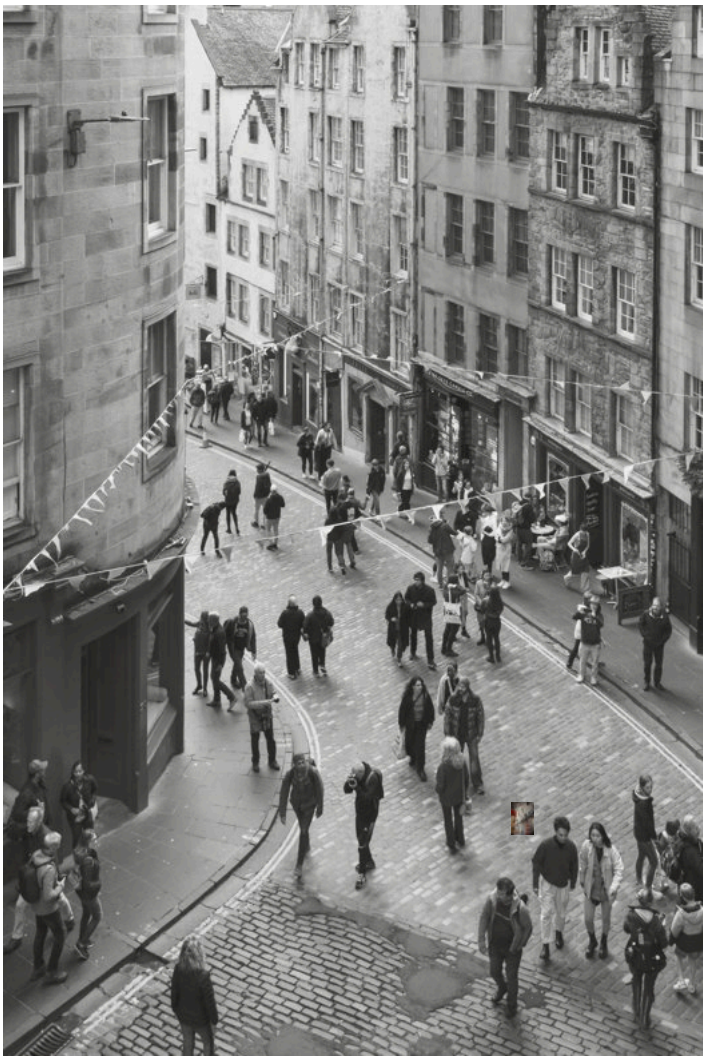
detail enhancement, noise reduction and upscaling AI processes – for a 16MP sensor to create a 64MP .dng version is transformative when the level of extracted apparent detail is seen. For this to work the sharpness delivered by the lens really counts.

After returning the lenses, Natalie felt that the 100-400mm was surprisingly light after being used to much smaller lenses, like the 35mm (50mm equivalent) she mounts on X-M1. "I was amazed that you could get such clarity with the long lens stabilisation, as I normally have no stabilisation. I fully expected to have to use a tripod, considering the overcast and wet weather at the zoo, but there was enough light and colour to give good results", she said./

The Sigma 100-400mm ƒ5.6-6.3 DG DN OS X takes 67mm filters, is 86mm x 199.5mm and weighs 1135g. It comes with lens hood and caps and retails for £899.99. The Sigma 23mm ƒ1.4 DN DN X takes 562mm filters, is 65.8 x 76.9mm weighing 340g. It comes with hood and caps and costs £449.99. Both are dust and splash resistant, as their use in the rain proved.

– DK

Photographs by Natalie Bays.



West Bow, Edinburgh, with some photography taking place. B&W edited shot, 1/400s at ƒ8, ISO 1600, cropped and verticals de-diverged. Top left, a full shot using Fujichrome Velvia film look' below this, a 150dpi detail from the same view taken at ƒ1.6, and bottom the same detail at 300dpi after putting the raw file through ACR AI Enhance – the words 'Handmade Natural Home Fragrance' are clearly legible in this, but not in the un-enhanced image.

Acrylic blocks and panels – home or away?

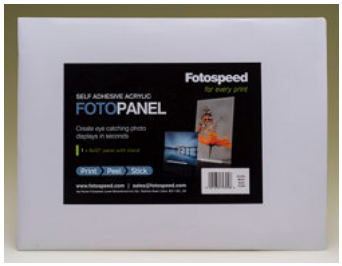
As the big season for creating photo gifts for family and friends rapidly approaches, the lead time for ordering finished print display products can often be overlooked. Some mounted or framed photographs can be produced in a day or two, others may need a couple of weeks.

Even specialists in the field like **DS Colour Labs** state 2-5 days for products like their acrylic float prints (a slick borderless image surfaced with a choice of 5mm or 8mm thick crystal acrylic high gloss and a 3D mounting spacing it away from the wall) and given the process of bonding the print and polishing the edges this is one of the fastest times you'll find.

Costs for lab produced acrylics are not excessive – from DSCL under £28 for a 10 x 8" desk panel with a stand – and like this example they are all finished and ready to give or sell. There's no additional mounting or framing needed, the weight is reasonable, they are very tough and survive posting, and they are completely neutral in terms of décor style. No-one is going to be unhappy with any of the popular acrylic offering whether blocks or panels with or without float or pillar mounting, desk stand, picture hook hanging or wall fixing.

But you can come very close to the quality of a lab acrylic by using products from print-room suppliers like **Fotospeed** and **Permajet**, and we've taken time to test two different products.

One, which we have tried in 10 x 8" desk panel form, is Fotospeed's self-adhesive **FOTOPANEL with Stand**. This is designed for one-time use – you must get the print right, and get the mounting right when the print is squeegeed down on to the self-adhesive clear layer which bonds it to the reverse of the 5mm acrylic. There is a very clear instructional video: *https://youtu.be/p8Zc3ggGTgA* and if you spend £19.99 on a 10 x 8" to make your own display presentation to sell or gift you're only going to make a significant cost saving over the lab equivalent if you get it right every time. You must use an inkjet paper which has an extremely smooth surface free from any texture that could create tiny silvery spots of reflection if the adhesive does not seal the print to the plastic to perfection.



Top: a circular acrylic from DS Colour Labs. Costs of lab-made acrylics are very competitive and quality is high. Above, three results compared – a 10 x 8 Fotospeed Fotopanel, a 7 x 5 Permajet Magnetic Acrylic, and a solid thick lab made block. The refraction (bottom) gives a unique look. Left, the Fotospeed Fotopanel arrives in an envelope like printing paper. The Permajet magnetic block comes in a postable box.

The recommendations from Fotospeed are their brand new **PF Matt Infinity 265**, Photo Smooth Pearl 290 (mentioned in the video but not on the web page for the Fotopanel), PF Gloss 270 or Matt Ultra 240. You'll find that the company offers a bewildering range of papers with surfaces that may sound similar, in different weights, but the recommendations are very specific and determining whether some paper you happen to have in hand – like us… – would work might be an an expensive experiment. We were not able to get the mew Matt Infinity 265 but had Photo Smooth Pearl and PF Gloss. But we also had some Fotospeed Art Smooth Duo 210 in stock, and preferred the way the image printed on this. It's got a hint of texture which Matt Infinity 265 should eliminate entirely. They also supply a squeegee for getting the print in perfect contact, and a kit including a craft knife for cutting the print edge flush with the acrylic. A laptop screen cleaner served as a squeegee very successfully and a Stanley knife with a new blade trimmed easily for a perfect edge.

These panels are not just a plain sheet of perspex cut to size – they have the right refractive index to look the way they do, and there's a bevel round the outside which emphasised this quality. The edges are polished just as a lab print would be.

We would suggest you need to work in very clean conditions with very good light, use a blower or soft brush to ensure the print is free from any dust, and follow the video instructions carefully. A properly produced Fotopanel will not look like a D-I-Y product.

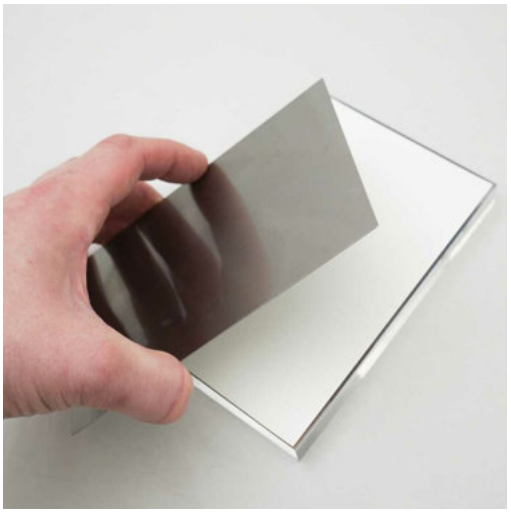
There is an alternative acrylic magnetic panel product which is offered by Fotospeed in 6 x 4" only, which uses a metal back panel fitting precisely into a routed recess behind the print and held by magnets. This is £10.99 and while not a super-thick block, and lacking the stand which comes with the self-adhesive Fotopanels, it's 'proppable up' and no special paper or care is needed – any 6 x 4" print can be popped in.

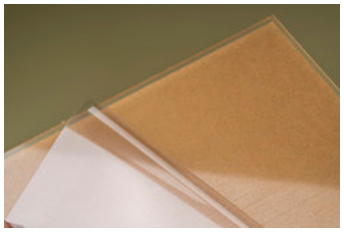
In more sizes, Permajet offers their own **Magnetic Acrylic Image Block**, which forms a plastic sandwich using powerful magnets to clamp it together with a print in between. It's not just a regular acrylic block either – the two halves add up to a 20mm thickness, and allow a double-sided print to the put between them, as a reversible mount.

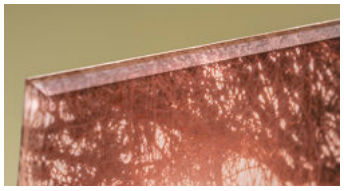
Of this, they say "ideal for any home, retail outlet or office environment as a countertop display" and the sizes offered of 6 x 4", 7 x 5", A5, 8 x 6" and especially A4 do point to commercial uses. An A4 printed menu could be sandwiched, printed double sided or made with two sheets back to back.

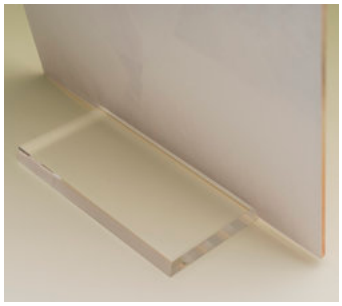
They have a video promoting this system, as it hardly needs any instructions to use: *https://youtu.be/JE8850e-HRM*

While the sandwiched block does not come with a stand like Fotospeed's panels, it is thick enough to be free standing just like lab photo blocks. If you plan to position this in front of a window or light source, we'd suggest putting an opaque sheet behind thin prints if you can see light through them. Using two prints back to back reduces the magnetic clamping, duplex printing on thin paper may suffer show-through. Thicker double-sided 'duo' photo papers are more opaque and there should be no show-through. Because no adhesive is involved, there's no need to use any special paper type or surface. But since the image is not bonded to the acrylic in the same way, there's also a difference in appearance. The great benefit is that as long as the Magnetic Acrylic Block is kept scrupulously clean it can be re-used with new prints at any time. That video shows it being handled with white cotton lab gloves, which we would recommend for most print handling, mounting and framing with acrylic or glass.









Top, Permajet magnetic 'sandwich' left compared to Fotospeed's recessed block with magnetic metal back plate. Above, peeling the foil off the Fotopanel exposes the glue layer, and the 10 x 8 panel when placed on an A4 print has good leeway for positioning and trimming. Above, the Fotospeed bevel edge and knife trim, and the supplied acrylic stand. Right, how the Permajet sandwich compares in thickness to a lab block (it can be used double sided). Below, Permajet's shot of their 10 x 8.

How about photo frames?

You will find if you visit a branch of The Range that this chain offers many sizes and types of conventional photo frame with proper glass, at prices which beat even those of Hobbycraft or IKEA. Some frames have acrylic 'glass' instead but it's rarely as crystal-clear and clinically clean as the products from our specialist photographic suppliers.

Even so, it's well worth looking at their offerings if you are considering staging an exhibition, but don't do so *after* making your prints and don't bank of being able to get extra frames later on. The sizes offered such as 16 x 12" versus A3 or 14 x 11", the frame itself and the exact size to trim a print for a good fit can all change with new stock and it's important to buy all the frames you need to match at one time. Yes, you can frame up a set of prints in 16 x 12" with glass for under £5 a pop with what appears to be a wooden finish ('Somerset' frame) or opt for A3 with a black ash look wide frame for under £7. Combine this with your own inkjet printing and the costs of putting on a smaller format show, something suitable for a restaurant or foyer space, almost evaporate. However, you'll find the hanging fixtures in the wrong place unless you want a visible picture hook and cord – but maybe that's how they do it in the PRC!

– DK

Understanding video Log recording modes

Gary Friedman explains – for the benefit of still photographers and those new to video on the latest cameras – how Log recording works

If you grew up on the photography side of things, you'll probably be quite confused by the ridiculously complex variables that are involved with video. Photographers never needed to select a gamma curve or use a LUT to get what they wanted. They just shot in RAW which allowed for the greatest amount of manipulation in post. Why don't videographers do that?

Well, many high-end cameras do, as they are able to offload RAW video through the HDMI port to be captured by an expensive HDMI recorder (and if it can capture 8K video, it's even more expensive.)

The problem with this approach is that the sheer volume of data you have to manage gets very large very fast. And the more video you shoot the volume you need to process (and eventually archive). The only other option is not shooting in RAW, which means you'll be shooting with extremely limited dynamic range.

How's that? While your camera's sensor can see about 14 stops' worth of dynamic range, your everyday HDTV can display only about six stops. That's it. How that came to be isn't hard to understand – during the market research phase of the standards-making process many people were asked to judge the best-looking image from a wall full of different screens – not unlike how televisions are displayed at a Big Box electronics retailer today – and of course consumers gravitated toward the screens with the brightest colors and the highest contrast (high contrast and High Dynamic Range are opposites). Standards always involve compromise between what the filmmakers want and what the consumers prefer.

In the past, professional cinematographers would address this intentional limitation of dynamic range by controlling their lighting – if the scene they were shooting had too much dynamic range, they would tell their lighting guys "Give me more fill light!", which would bring the darkest parts of the scene up to a level that the sensor could capture, so everything fit neatly into six stops. Sometimes they would also put a dark film on exterior windows so the outside view wouldn't blow out. Documentary videographers have a harder time, since they don't have that kind of control over the available light.

The solution the industry has come up with is far from intuitive: They're called Log Curves, and they work similarly to the Curves tool in Photoshop: Changing the shape of the curve will re-map brightness levels from the input (X-axis) to the output (Y-axis). Using a gamma curve will "compress" the 14 stops of dynamic range into about six stops' worth, all in the name of keeping details in your shadows and preventing the sky from blowing out when played back on a consumer HDTV. With all the sensor's natural range captured, the dynamic range of the scene can be expanded later on to the appropriate degree (according to the director's vision) in a post-production process called "grading".

There are a ridiculous number of Log curves in use in the industry – some of them manufacturer-specific. Fujifilm calls their curves "F-Logs"; Canon uses C-Log, and Sony has S-log but they all work the same way. The illustrations here show Sony's most recent gamma curve, the S-Log3.

The Gamma Curves

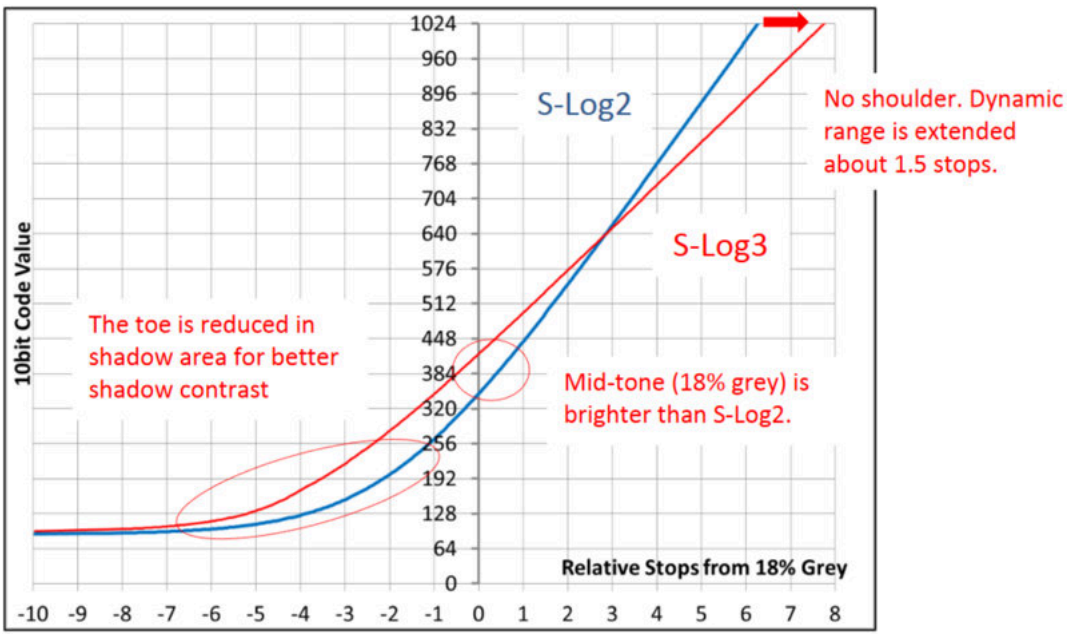
Do you remember Dolby audio? It's been used by the motion picture industry for decades in order to dramatically reduce the high-frequency "hiss" sound from the sound track. But not many people know how it works.

It's actually pretty simple: when the master print is created, all of the high sounds are accentuated – made louder than they normally would be – and the soundtrack is recorded that way. In the projection booth, the opposite is done – the highs are reduced, making the sound track sound "normal" and hiss is actually attenuated in the process as well. Yeah, that's unintuitive, but it works.

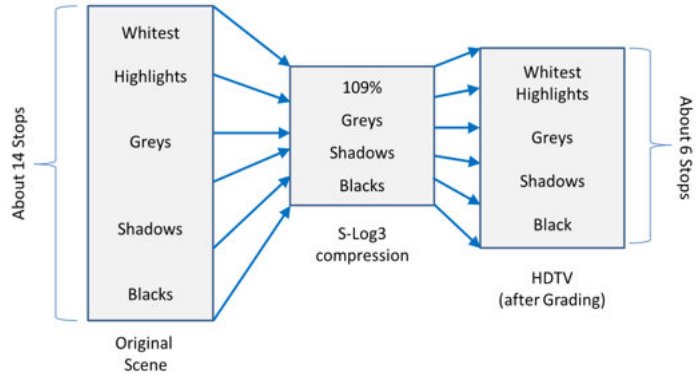
Well, an analogous process happens with gamma curves. You compress the video brightness levels in the camera ("the gamma function"), and then you have to do almost the opposite to the video footage in post-production (a process called "grading"). This is like shooting RAW for its greater dynamic range, and then adjusting the curves in Photoshop later on to place your whites and blacks where you want them.

The original purpose of gamma curves was to correct for the non-linear response of the early TV screens – whatever the cathode-ray tube couldn't display efficiently, was bumped up in the camera to even things out. The graph representing what brightness levels were being amplified (or not) was called a "gamma curve", and the idea of using a curve to change how brightness levels are rendered in the final output persists to this day.

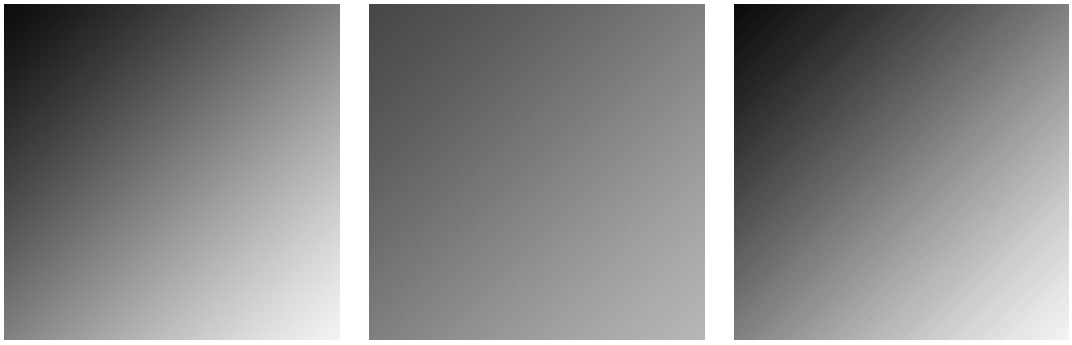
Have a look at the illustration below. The solution involves a



The red curve represents the logarithmic compression of the video image using S-Log3. The Gamma curves map the 14-stop dynamic range of your sensor (bottom axis, the input) to the 6-stop dynamic range of an HDTV (center axis, the output scale, placed at 18% grey midtone). Here it's being compared to Sony's previous favorite standard, S-Log2.



Grading: Sony's S-Log3 compresses the dynamic range of the original tones (left) so much that it looks very low contrast (center). Using a process called "Grading" the compressed scene is then expanded to match the 6-stop range of an HDTV. The gradients below give an idea of what's going on – the original to the left, compressed to ow-contrast in the center. Look carefully at the graded right square and you'll see the "banding" effect that can occur if you apply too much grading in post.



Above: Sony and other makers with hybrid still/video models offer Log profiles which can be used to create in-camera JPEGs with the same exposure and contrast curve as movie footage taken using the same profile. Left, a Standard in-camera JPEG; right, without any change to exposure, the same using the 'PP9' S-Log3 profile. For a full explanation of Log shooting versus Picture Profiles on Sony models see https://helpguide.sony.net/di/pp/v1/en/index.html
Below: an example using a still image shot as raw, to show how grading works. Left, a typical in-camera JPEG again with the Standard profile. Contrast with other profiles such as Landscape or Portrait will differ from this but not greatly. Center, the raw file's values developed to match the values of S-Log3. Right, how grading with a specific LUT cam change both the tone values and colours in the image.

transfer function called a Log Curve, where input values along the X axis get translated into the values on the Y axis, similar to how the curves tool works in *Photoshop*. The actual response curve for S-Log3 looks like the red line on the the graphic.

Grading

Grading is done in post-production, using such popular NLE (Non-Linear Editing) computer editing packages such as Adobe *Premiere Pro*, *Final Cut Pro*, Magix *Vegas*, DaVinci *Resolve*, and many others.

The process in general involves applying a function called a Look-Up Table (LUT) which can selectively decompress the S-Log3 file in order to place your blacks, whites, midtones, and color so they look the way you want them. Every program has their LUTs in a proprietary format. Some cameras actually allow you to employ LUTs to play back the video you just shot so you can see a close approximation of how it will look when graded in post production.

So that's what all of the gamma curves do – they remap brightnesses so they can all be recovered from deepest shadow to brightest highlight and assigned new levels.

https://www.friedmanarchives.com

Learn your laws… don't forget your geometry and arithmetic!

For photographers, light is our artistic medium. We control and shape it to create our images. Although most of us don't know, or care, about the physics, properties and behaviours of light, understanding them can make our jobs much easier.

Light is a type of energy called electromagnetic radiation. This means that it behaves in a very predictable and repeatable manner. Two of the main properties of use to photographers are; light always travels in straight lines, hence reflections are repeatable, and the intensity of light changes relative to the distance from the subject.

Light always travels in straight lines as hence the law of reflection states– *Angle of Incidence = Angle of Reflection*. This is a behaviour that is key in placing lights and modifiers as well as fault-finding where unwanted reflections are coming from. See the diagram below, simplified, where a reflection of the camera can be avoided.

When considering flat surfaces it it very easy to determine where direct reflections are coming from as there is only one angle involved. However, for cylindrical objects reflections can be seen from all around of the subject, from immediately in front of the object to directly behind it (see the second diagram, where the subject will always show a reflection of the camera and also of all parts of the studio including some behind it).

This means that, for cylindrical objects, we need to be able to control the light that is in a 180° arc around either side of the object. This also means that including a reflection of the camera is inevitable. For spherical objects this is even more difficult as we need to control the light and reflections from literally the whole room. On the positive side, fault finding and fixing reflections is much easier when thinking in straight lines.

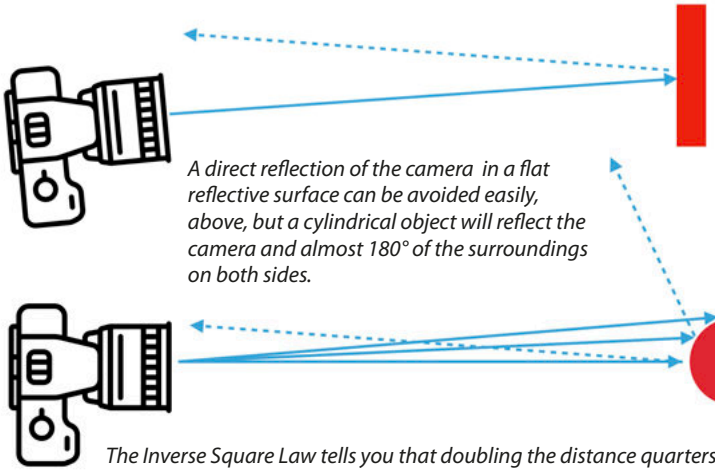
Inverse Square Law

Another behaviour of light that is constant and very useful to photographers is what is known as the Inverse Square law. It is this behaviour that we use to create smooth gradients across subjects that can be used to highlight curves and contours. In mathematical terms, the light intensity is inversely proportional to the square of the distance. The practical effect is that, for a constant power light, the light appears brighter the closer it is moved to a subject. However, it is not as simple as if the distance is doubled the light is half as bright, this is where the *square* term comes in. The distance value is squared to get the change in light; if the doubled the effective brightness falls to a quarter, and if the distance is tripled the illumination is a mere ninth of the original light.

When considering the inverse square law the size of the light source and distance from the subject must also be considered. For example; the sun is a very large, but due to the large distance we are from it, any changes that we make of the distance between the subject and the light are so small and insignificant in relation to the distance of the sun to the earth it appears that there is no change in light intensity. Similarly, but in the opposite sense, if a light is relatively very large compared to the subject, which can often be the case in the studio when photographing very small subjects such as jewellery, the subjects are not physically large enough to see the change of light intensity with distance and, again, there appears to be no change in brightness. In these cases, the most effective solution is to change the size of the lights such as replacing a large soft box modifier with a small snoot or protection attachment.

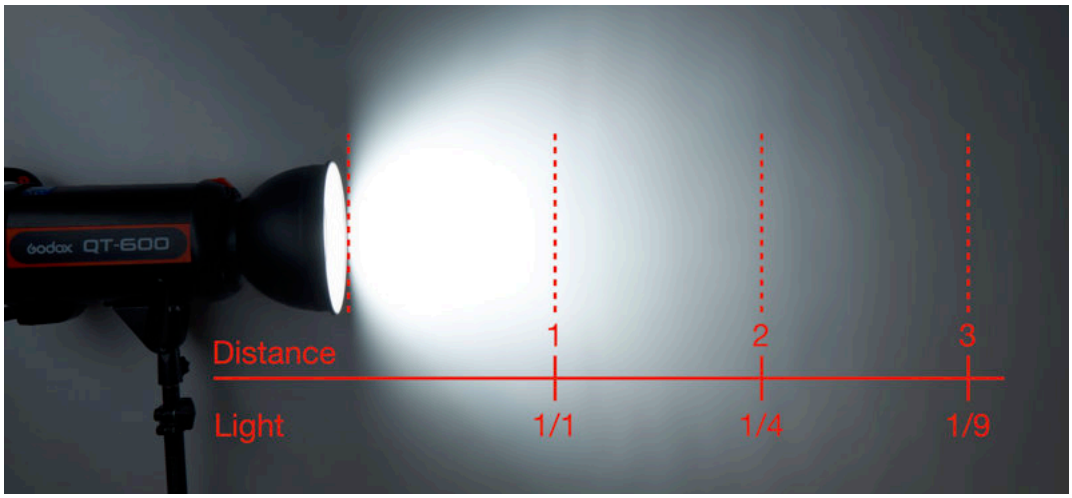
In addition to calculating the angles involved in positioning lights there is another factor that can be adjusted to control light placement; the choice of focal length of lens. If a wide angle lens is used, the camera will usually be placed relatively close the subject. This means that there will be a larger reflection of the camera created on the subject. It can also mean that there is limited space for lighting modifiers to control the lighting and other reflections. Therefore, it is often much more practical to use a longer focal length so that the camera is further away from the subject and the corresponding reflection is much smaller. It also, provides more space for lighting modifiers to be placed around the subject.

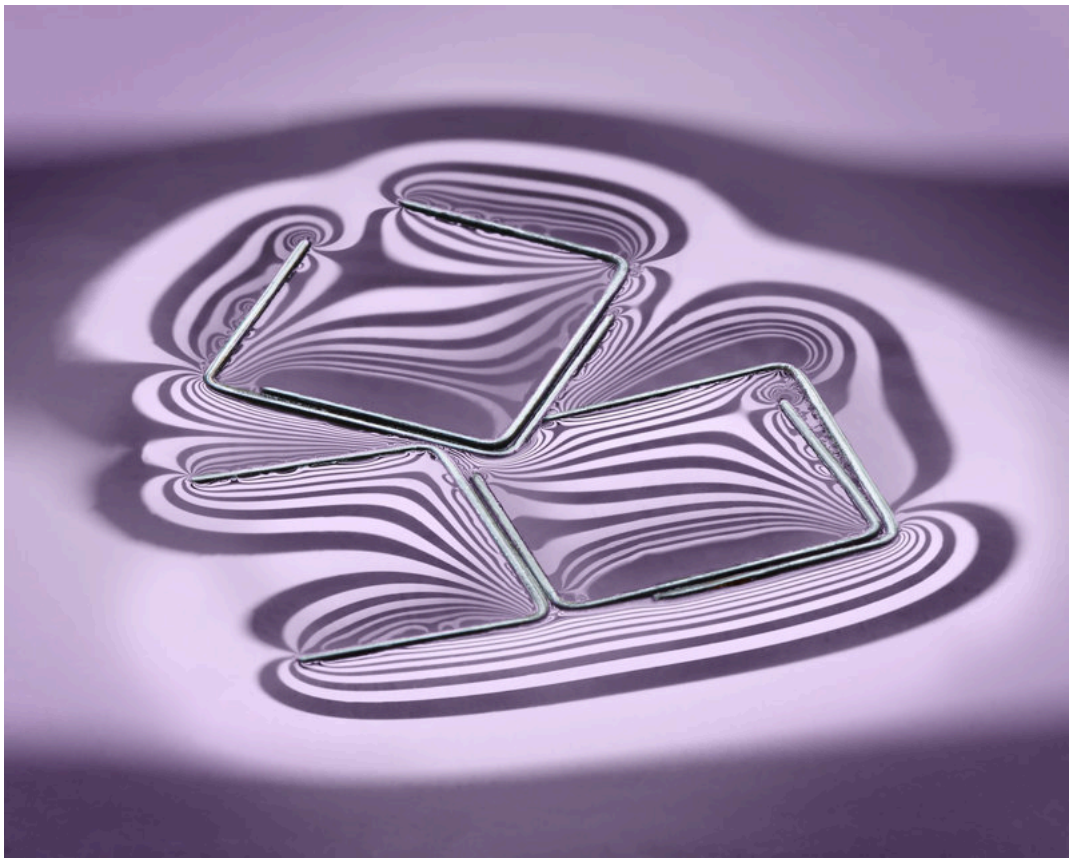
Whilst the physics and calculations behind the behaviour and characteristics of light are complex, this basic knowledge of the principles allow photographers to predict how light will behave giving us the freedom to use these characteristics to our creative advantage.



A direct reflection of the camera in a flat reflective surface can be avoided easily, above, but a cylindrical object will reflect the camera and almost 180° of the surroundings on both sides.

The Inverse Square Law tells you that doubling the distance quarters the light, tripling it cuts it to one-ninth.





These recent images from Ian demonstrate the importance of being aware of both the law of reflection and the inverse square law. The top setup, which achieved a Silver award in the Guild's monthlies, makes full use of the progressive grading of light created by distance from the light source for its background. The bright metal spring egg-cup shows clearly how Ian had to place a softbox (off to the left, also giving the contrasting gradient on the egg) and a large reflector off to the right.

The floating staples also demonstrate an entirely different law of physics, that of surface tension, but it's the curved water reflecting the masked softbox Ian used to create contouring stripes which shows his understanding of how surfaces, light and reflections interact.

Ian is a UK based specialist and popular instructor in studio product photography and lighting.
https://www.iankNaggs.com

Outside the realm of the law…

Our ex-NASA scientist Gary Friedman explains why the Inverse Square Law doesn't always apply – big close softboxes included!

Imagine you brought a gun into space, and fired a bullet. Newton's first law of motion says that bullet will travel forever in the same speed and direction, unless hindered by something like spacedust or diverted by the gravitational pull of a planet or star. You would also go flying backward when you fired the bullet, but that's a subject for another time.

Photons work the same way. They keep going full strength until impeded. That's why the light from the sun isn't attenuated by the time it hits the earth.

And yet for years I've been teaching photography students about the Inverse Square Law, which states that the light gets weaker the further away it gets from the light source. And I gave several examples proving this law! Have I been peddling a lie all of these years?

The answer is both yes and no. People experience the inverse square law all the time, especially back in the days when cameras had pop-up flashes and people used it as the sole source of light in a dark room. Here, if there are multiple people in the shot, it's important that all subjects are the same distance from the flash, for if the distances are different, only one of them will be illuminated "properly" – the rest will be too dark.

Why is that? Why don't all of the photons travel forever unless unimpeded? The answer isn't because the light is getting weaker; it's because the light is spreading out. Have a look at the figure below.

A typical flash-on-camera or built-in flash snapshot displays the inverse square law (Photo, GF).

As the light travels away from the point source, it spreads out. The total amount of illumination is still there, it's just spread over a larger area the further away you get. So if you were to take a light meter and measure a specific point at various distances away, the light intensity at that specific point will be lower. And the further away you get, the more the light spreads out, and the lower that one specific point will register on the light meter. But the total amount of light a given distance away remains the same. So it's not violating any basic laws of physics.

But can it be said to be a law when there are so many exceptions? Here are three scenarios where the light falloff doesn't adhere to this well known 'law':

1) Lasers

This is the most common counter-example. Laser light is famous for barely spreading out at all, allowing you to shine it at the moon and still retaining its intensity. The reason for this is that laser light is "collimated", meaning it shines in only one direction and, unlike light from a point source, has no inclination of spreading out.

Well, that's a bit over-simplified… lasers do spread out, but not as rapidly as light from an incoherent light source such as a flashlight. A few websites point out that the Inverse Square Law equation for lasers has a constant associated with it: *1.96 x 10⁷*. So for practical purposes the law doesn't really apply.

2) Lights with Parabolic Reflectors

Examples of this are searchlights, and studio flash with a parabolic reflector. A parabolic reflector sends all light rays in the same direction, which in theory will attenuate the light dispersion. "In theory" because parallel light rays don't exist in real life. They will always diverge or converge slightly. These kinds of lights don't spread out nearly as much as a point-source of light, and therefore the law doesn't apply to them.

3) Lights whose surface area is significantly larger than the distance between light and subject

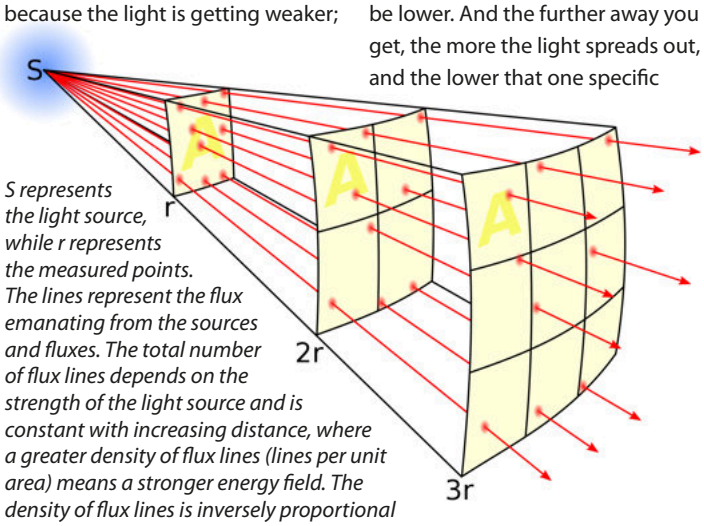
A third, rarely-discussed scenario is where the size of the light source (a flat panel, for instance, or an overcast sky) is significantly larger and/or closer than the subject being photographed. See example from the Film Gear LED Flo-Box. In instances like this, empirical evidence says that the light loss is 1/d instead of 1/d².

But What About the Subject-to-Camera Distance?

Interestingly, all of this light falloff calculation stuff only applies to the light that goes between the light source and the subject; it does NOT apply to the light that bounces off the subject and goes back to the camera lens. In that case the exposure for that bounced light remains the same even if the camera changes distance or position. How can that be?

Let's do a thought experiment. Let's say you double the distance between the camera and the subject, so you will have effectively one quarter of the amount of light hitting the sensor of film (the inverse square law). BUT the area of the subject on the sensor that SAME LIGHT HITS has diminished by ¼ as well (½ the height times ½ the length makes for ¼ the area). So basically even if the light gets weaker by a factor of 4 (reflected or not), the SURFACE it has to expose diminishes by the SAME FACTOR, which means that the exposure value stays the same..

Unintuitive, huh?



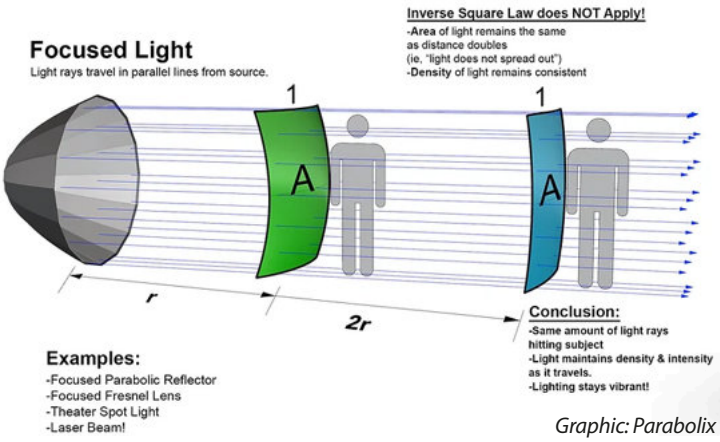
S represents the light source, while r represents the measured points. The lines represent the flux emanating from the sources and fluxes. The total number of flux lines depends on the strength of the light source and is constant with increasing distance, where a greater density of flux lines (lines per unit area) means a stronger energy field. The density of flux lines is inversely proportional to the square of the distance from the source because the surface area of a sphere increases with the square of the radius. Thus the field intensity is inversely proportional to the square of the distance from the source. Graphic and text (terminology Gary tries to avoid using!): Wikipedia.org

The focused beam of searchlights reduces inverse square law effect (CC).

A simple product shot using a single light. This subject works much better with a multi head setup including some textural direct light and rim lighting, but for this demonstration, its white wings and height show just how even the light from a 90 x 120cm softbox used 40cm above the table level can be. The exposure at ISO 100 was ƒ11. A Minolta Flashmeter IV fitted with a flat receptor registered ƒ8.9 at table level, ƒ11.4 at the level of the owl's face, ƒ11.6 at the tip of the higher wing, and ƒ11.9 when held roughly 3cm below the scrim of the Pixapro softbox. The fall off is limited to one stop no matter where anything is placed between the softbox and the shooting table. The gradation is a very unfashionable graded background, not a lighting effect. (Photos, DK).

TWO CONTRASTING products, and technical graphics explaining why they do not obey the point source based inverse square law. Below, the **Parabolix** focusable parabolic lighting reflector. Many models are available to cover a range of sizes, and the website for this US-made product has an excellent interactive diagram showing how the spread of Illumination changes with the position of the LED or flash head mounted inside – **https://www.parabolixlight.com**

Right, the **Film Gear** Flo-Box 2 x 4 light fall off chart and the lighting product which is made using LED tubes not fluorescents. The chart *(right)* shows 970 lumens at 1m distance and 300 at 2m, rather than the 242.5 that would be expected from a smaller light source obeying the law – snd 130 lumens rather than 107.7 at 3m. This is not a large light source, using only two tubes 4ft long in a silvered reflector. The figures for a source such as a 90 x 120cm softbox, or a 150cm or larger octa as used for portrait and especially for baby photography, would be even further from obeying the law. **https://www.filmgear.net/**



Graphic: Parabolix

Above: the light falloff with distance for this Film Gear 2 x 4 LED light

No matter what the season, dogs are happy to be there! Here are three recent Guild monthly competition Gold Award winners reminding us that there are great portrait sitters and action subjects on every street, and they love posing for the camera. Facing page, a wintery composition by **Heather Cowdrill** of Birmingham *(https://www.facebook.com/heather.louisiicowdrill)*. Above, among the heather with **Jessica McGovern** *(https://jessicamcgovern.co.uk)*. Below, where there's water… by **Grace Fieselman** of Grace Marie Pet Photography, St Charles, Missouri USA *(https://gracemariepetphotography.mypixieset.com)*.

Two stories of loss – and a warning shot from Simon Lee Waldram

We have chosen to end this issue, at the end of 2023, with a brilliant example of one of the thousands of images taken of Sycamore Gap. For the benefit of those reading this magazine in fifty or a hundred years, should copies survive, this tree at Hadrian's Wall not only gave this location its name it gave it fame and became one of the most photographed trees in the world, until cut down in an act of vandalism. Lost for ever! Simon, who took this aurora photograph, also lost his Northern Light halo over Kirkjufell *(top)* when an SSD card with 3,000 of his final images failed leaving only small social media versions. Now he makes multiple backups. But his aurora over Skogafoss in winter *(left)* was not lost. You can find Simon on Facebook as simon-lee-waldram and on Instagram as simonwaldramphotography