

# CAMERACRAFT



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## CONTENTS ISSUE No 8

- Cover *Birch, Peak District*. Photo by Steve Walton.
- 311 Kodak City  
*Disapassionate records of Rochester, NY, now that film is no longer king*
- 312 Cameracraft Update
- 315 Tilt & Shift 2 by David Kilpatrick  
*A year on, we revisit the uses of perspective control adaptors on mirrorless systems, and introduce the Vizelex*
- 321 Photo Quest – Peter Karry  
*The image-making value of one small organised photo travel service, by repeat customer Peter*
- 326 Déjà View – London's skyline, by Vincent Oliver
- 327 Cameracraft Portfolio – Steve Walton  
*Taking a long view – real rollfilm and a camera producing 17cm long negatives produce superb panoramas*
- 335 American Artifacts – Phil Bergerson  
*Gary Friedman talks to a documentary photographer whose paired pictures tell strange stories*
- 340 The Friedman Files with Gary Friedman  
*From Dusk to Dawn – when daylight fails to inspire, take your camera out at night*
- 344 Perfect Coincidence  
*Richard Kilpatrick on Foveon's pixels which stack the odds in favour of exceptional image quality*
- 348 Rearview – our image gallery

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**I FOUND MYSELF** replying to a *Facebook* request from one of the most respected and expert photographic magazine editors in the UK. He was looking for examples to help him write the words for a requested feature. With four or so photographers supplying their thoughts and their images to illustrate, it's surprisingly easy to create a readable article taking up eight pages or more in a popular magazine.

"No fee, but you get to see your pictures in print and get a name credit", he said.

Well, I commented that it would be good to offer any photographers whose work was used a subscription to the magazine in return. This is exactly what I do today. Twenty years ago we paid fees for everything, but twenty years ago a typical magazine had four times the readership and four times the advertising revenue. I guess those two go hand-in-hand.

We can't pay for anything which would be posted on internet free of charge (and many photographers are paying to show their work on the web – it's only free on sites like *Facebook*).

But we can give contributors subscriptions, sometimes worth more than we would need to pay to use a stock library picture. That way the picture use is rewarded and we also know we have some good readers!

This editor's response, within minutes, was a private message asking me please not to suggest such things in public, and saying "no way, that ain't ever going to happen". Indeed he seemed quite upset.

So, not only was this totally commercial publisher (circulation and ad revenue chasing, consumer-orientated) looking for free content, they were so tight-fisted they wouldn't offer *anything* at all in return. We send a year's magazines for a single picture used here. We consider it a token, a courtesy, not a fee. What a world!

– David Kilpatrick



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# The city built from film boxes – a requiem?

Street photography and urban exploration are the current obsessions of the photographic community. Both find their way into 'Kodak City', a book documenting the post-filmopolypse decline of Eastman Kodak as an infallible Yellow God.

I enjoy fine print – not the small stuff which I can no longer read without glasses, the quality stuff which good books are made of. I am, however, always aware that form should be ruled by function. The amusing innovation of a slip-jacket covering only the middle of *Kodak City*, leaving the grey industrial-look linen textured hard cover showing top and bottom, is a result of form being ruled by imagination and doesn't look so good after it has fallen off, moved or got lost.

But this, of course, is what makes a book collectible and gives it potential future value – having a slip-jacket almost guaranteed not to survive the first change of ownership. Our copy has the initial print run, of just 1000 copies, recorded in its colophon by publishers Kehrer Verlag Heidelberg Berlin. With this short run and a high standard of print craftsmanship and finishing, it's no surprise to find many sources of funding and support credited. This is a piece of art not a piece of commerce.

Inside, Catherine Leutenegger's New Topographic documentary images examine what remains of Rochester, NY, the city created by and once dependent on Eastman Kodak's global photographic film production. They are taken in the best plane-parallel to camera manner, with a clinical approach to tone and colour. Medical and forensic photographers learn to value the same deadpan neutrality.

Since the pictures are a kind of post-mortem and record a 'scene of crime' of corporate failings, the style is very appropriate, and I find that

'deadpan' is used to describe them even in the book. Essays by three writers, starting with A D Coleman, are printed in English and French, as this work is supported by the Swiss Arts Council. The other two essayists are Joerg Bader and Urs Stahel. These texts comment on the recent history of Eastman Kodak and the final collapse in early 2012.

Some of this is well-known and the commentary benefits from hindsight. Steve Sasson's digital camera prototype in 1975 was not ignored but it was never an overlooked departure point for an early digital photography revolution. Kodak did not ignore digital imaging. They developed Photo-CD and professional digital versions of Nikon and Canon cameras ten years before Allan Coleman gave a talk (in 2000) where he says he watched middle-aged Kodak corporates 'grump and grumble' about his vision of a photographer in 2020 leaving college with not a seed of silver on a halide crystal in sight.

Nor did Kodak declare their 'entry into digital' at *photokina* 2002 (which was not one year after his talk) as they had been working with pioneers like John Henshall for a decade by that time. We had been publishing digital-only magazines since 1994 and Kodak Limited in the UK was a regular advertiser. They didn't ignore the digital revolution, they just had no idea how to replace the massive, falling revenues created by consumable film, paper and chemicals worldwide.

It's this vast turnover and income, distributed generously to events like the Arles Rencontres and countless



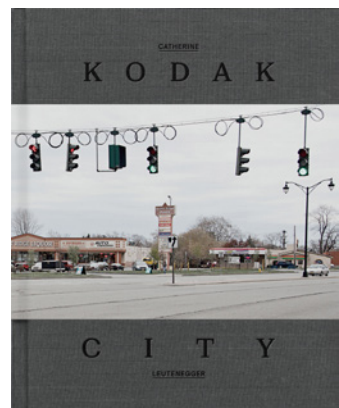
Above: *Communication*. Below: *Innovation*.



photographic festivals and projects, which also supported a large well-paid workforce, secure middle class and affluent élite in Rochester. Along with all the businesses, schools and facilities needed there were and are the Kodak buildings themselves, many now empty and unfurnished except for fixtures. These undamaged, half-abandoned, partially re-purposed spaces occupy a half-world between showcase architectural photography and grungy urbex dereliction.

This is definitely a book to own, a snapshot of one urban world after a mass extinction event. There are few humans in the pictures of this corporate Marie Celeste, as if the end of the world once promised for 2012 had actually happened and all souls instantly transported to infernal or celestial eternity.

Kodak is not gone, as a name. Film photography is not extinct. This was not to do with photography, or technology, or change – it was all to do with *How America Does Things*. The one-industry community, like General Motors' vast Detroit



Catherine Leutenegger  
*KODAK CITY*  
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Catherine Leutenegger,  
Joerg Bader, Urs Stahel  
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or the little gold ghost town of Bodie, has its prosperity or very existence determined by the fortunes of the business it grows around.

Catherine's images warn us all about that risk even if we all know it will happen again. Next stop Cupertino?

– DK



With pixel counts increasing even in the smartphone world – we have had extremely detailed and high quality results from the Nokia 1020 with its 42 megapixel raw-capable sensor – one of the most interesting trends this year has been the rebellion against this trend.

The highest profile 'low pixel count' camera introduced in 2014 is the Sony A7S. With 24 megapixel and 36 megapixel variations on the full frame mirrorless body already launched in late 2013, Sony surprised the industry with a 12 megapixel full frame sensor offering an unprecedented maximum sensitivity of ISO 409,600.

The A7S could be argued to be a video camera with still functions, as its main selling points in that sector of the industry are 4K capture (twice the quality of most HD TVs) and a superior codec. However, it's been bought by still photographers with enthusiasm for another reason, its completely silent shutter mode.

The A7S offers electronic first curtain shutter, which is similar to the silent or quiet mode of most DSLRs or mirrorless cameras offering live view. The exposure is started electronically, and ended by a physical shutter covering the sensor. There are downsides to electronic first curtain, including incompatibility with some high speed sync flash protocols and a limit to fast shutter speeds, locking out settings like 1/4,000th or 1/8,000th or degrading the results. Having used several cameras with this function, we can also confirm that the almost zero lag between pressing the shutter release and getting the exposure (as short as 1/50th) the user needs to re-train for correct timing. Photographers are used to anticipating the moment, traditional SLRs had delays between 1/30th and 1/8th.

The A7S has an entirely electronic shutter option, with no sound whatsoever and no significant delay in capture timing. Combined

# CAMERACRAFT UPDATE

*Sony's A7S is only 12 megapixels but can shoot in the dark as it is six times more sensitive than similar cameras made when 12mp was normal*



with the ability to shoot in near-darkness, and the arrival of several lenses faster than  $f1.0$  from innovative small optical makers, the electronic viewfinder becomes a night-sight device enabling news, military and police photographers to shoot in street lighting as if it was daytime.

Sony's strategy can be seen clearly now, with the line-up of three full frame bodies all offering different sensors for a range of uses. While you might not want to own all three it's easy to imagine owning an A7S 12 megapixel and an A7R 36 megapixel as the basis for a working system.

No other maker has done this reversal to a low pixel count yet, but Fujifilm has hit a winning formula by sticking to one sensor size – 16 megapixels APS-C – and not leaving the sweet spot. Though sensor types have changed within the price range, all the current Fujifilm X series models have 16 megapixel sensors. There is a rumour that Fuji will introduce a full frame model, based on the fact that their X-mount is the only one other than Sony's E-mount which has had this ability from the start.

Nikon has also stuck firmly with 16 megapixel full frame sensors – a very modest technical challenge – for the retro styled Df and high speed, low light capable D4S which pre-empted Sony's ISO 409,600 by being the first camera ever to offer it. Most recently they have updated the D800E to become the D810, one model without an AA filter, with improved performance and capture rate.

The smaller file sizes now popular have been enabled partly because the glass sandwich that tops the sensor is very different in 2014 compared to 2004 when modern APS-C sensors first appeared (in the form of the Sony 6 megapixel and Canon 8 megapixel mass produced types). It was originally up to 4mm thick, composed of several layers including the anti-aliasing filter which blurred the image before it reached the sensor. This was needed as the pixels were so coarse, relative to a typical image size like a 10 x 8" print or a magazine page, jagged edges could appear on diagonal lines.

At 16 megapixels, a weaker AA filter is adequate and at 24 megapixels or higher it's

possible to do without the pre-softening and post-sharpening process entirely. The glass sandwich over the sensor has reduced in thickness to 2mm or less, except in MicroFourThirds cameras where it remains much as the original FourThirds sensor design and can be up to 4mm. This has a benefit in that any dust landing on the front of this filter and protector sandwich is further from the sensor focus plane, and therefore ends up imaged as a blur not a sharp dust spot.

The optimum solution seems to be a cover glass or – as with Olympus – a pellicle plastic film skin positioned more than 2mm away from the focal plane with a vibration mechanism to 'buzz' it and remove dust particles. There will then be a sealed air space which will include an infrared and UV cut filter, may include an AA filter or not, and finally there's the sensor with its colour filters and microlenses bonded to the pixel array.

Compare the results from a 2004 camera like the Nikon D100 or Konica Minolta 7D with any 2014 model and the most striking difference is the softness of the detail at 100% view. The best current cameras produce an image so sharp it resembles a 2004 image reduced to 50% size. Lenses have also been improved.

And that, in the end, is why the industry is not pushing to go beyond 36 megapixels and many of the best cameras now offer 16 megapixels. This image size also seems to be ideal for most computer screens, for most printers, most printed uses, for galleries and library sales. It's very fast to process and view and the latest affordable memory cards, up to 64GB being sold for as little as \$30, will hold many months of raw files. Why wipe your card at this price? Fill it up with many thousands of raw files, then file it away and buy a fresh \$30 card. Once they were \$300 and before that \$600 or even \$1,200. Now they almost give them away.

In this issue you'll find an article on the progress of the Foveon X3F sensor, the unique



*Panasonic's Lumix ZF1000 has an f2.8-4.0 9.1-146mm zoom, twice the range of the Sony RX10 for a similar sensor size and body design*

alternative to all other sensor types, to reach the level of the current Sigma dp2 which claims to match 39 megapixels of conventional sensor image. This is the AA-filter free, coincident pixel imaging and Sigma matches it perfectly to fixed lenses in the DP compact camera range.

The one-inch sensor format continues to develop, with Panasonic introducing their own MOS 20 megapixel sensor to compete with Sony's CMOS used in the RX10 and 100 series models. Sony has updated the RX100 to a Mark III with a 24-70mm f1.8-2.8 equivalent lens, reducing the focal length range but increasing the portrait setting aperture. The RX10, which we have been using, finds a competitor with a massive zoom range in Panasonic's ZF1000. The bridge camera style is so similar it's hard to believe that the two do not have some kind of common origin. Even the extreme 25-400mm equivalent f2.8-4.0 zoom extends in a single tube action in precisely the same way.

Nikon has taken the one-inch sensor to 18 megapixels (where the extra resolution helps because of the use of these tiny camera bodies for extreme telephoto work). No-one really doubts now that 18 or 20 megapixels can indeed be crammed into 8.8 x 13.2mm and deliver great results to ISO 1600. The Panasonic, like

Sony's A7S, also offers 4K video and uncompressed video output to external recording devices.

Samsung's entry into this field, reported in our last update, seems to have had no visible effect. Where did it go? Damned with faint praise in the only magazine test report we've seen, we can only assume that the sensor and lenses fail to shine.

At the other end of the range, we must place on record that Phase and One and Hasselblad have finally joined Leica in accepting that CMOS sensors can compete with CCD for colour and quality. Their latest sensors are both 50 megapixel medium format backs, though not identical in crop area. For the first time we can predict video recording will come to medium format. Movies shot with this will have not just a cinematic feel, but the same kind of differential focus as 70mm film, an entirely new look for many film makers. The new Hasselblad H5-D50 and Phase One IQ250 do not offer video, but have Live View functions with 25fps refresh. Live View has always arrived before video recording in the development of both consumer digital cameras and DSLRs, and we expect the next generation of MF backs to offer the first 'IMAX' like video – as well as even better still image quality.

## Lens extremes

Lenses have to match sensors in all respects, but it doesn't stop the business chasing figures. The widest, the fastest, the longest, the most expensive...

A new record-breaker arrived here in the form of the Tamron 16-300mm f3.5-6.3 Di II VC, the first superzoom to extend down to 16mm. We were able to test a Canon version on the Sony NEX-6 body using an adaptor, meaning we were able to see the full coverage (Canon owners only get 17mm equivalent compared to the same lens used by Nikon, Sony or Pentax owners). It's best described as acceptable, no worse than many 18-300mms, with surprisingly good geometry as no maker is expecting to build lens correction in for an independent design like this. You would not however want to rely on it as your only lens.

Nikon has introduced a 'light' version of their own 18-300mm for DX. The first version is f5.6 at the long end

and performs pretty well. The new version is a bit lighter, with a smaller filter thread and f6.3 at the long end. But it's not all that much cheaper, and by the time the not-included lens hood is added the small cost advantage is almost gone. It isn't as good a lens and we would advise getting the slightly larger and heavier variant if you can.

Canon has a new 10-18mm f4.5-5.6 'lite' version wide angle to undercut their existing 10-22mm f3.5-4.5 design by at least 50% in the shops. This little lens, though cheaply made, turns out to be an excellent performer and you must remember it's coming in at a third of the cost of designs like the Sony 10-18mm E or the Fujifilm 10-24mm X. They also introduced a 16-35mm f4 stabilised L series wide zoom. We've had this lens to test and used a Sony A7R body with an adaptor to see how well it could handle 36 megapixels (Canon's current maximum is 21 megapixels for full frame). It proved bitingly sharp but with a marked curvature of field at 16mm. The price, at least at launch, was also not all that much below the existing non-stabilised 16-35mm f2.8 L II.

## photokina 2014

We are now in the run-up to photokina 2014, Cologne, September 16-21st. Many more new products and developments are expected to be unveiled. It's uncertain whether we will attend, as it's expensive and everything you want to know is on internet before the press conferences even open. See:

[www.photokina.com](http://www.photokina.com) for details of this important biennial photo trade fair.



*The Tamron 16-300mm Di II VC lens is a very compact superzoom with a true wide angle ability.*

# SHIFT & TILT 2

My search for one – just one – old manual focus extra wide angle lens with enough spare coverage to allow some movement beyond the full frame image circle is one which started a year ago and continues. It's not very easy to obtain lenses to try without buying them. The Scottish used equipment specialists, Ffordes of Beaully, allow mail order buyers to check items over and return if they don't meet requirements, reducing the cost to postage two ways. Most dealers offer this as it is written into trading law. Sellers on eBay are not likely to appreciate your taking this approach.

The objective was and remains to identify which classic manual – or perhaps AF – wide-angle lenses have

RELATIVELY LOW-COST ADAPTORS ALLOW YOU TO USE LEGACY SLR LENSES ON NEW MIRRORLESS SYSTEM BODIES WITH A DEGREE OF PERSPECTIVE CONTROL. A YEAR ON, DAVID KILPATRICK REVISITS THEIR PRACTICAL USES AND PRACTICAL LIMITS.

the largest true angle of view.

There are two aspects to consider. One is the optical design. The larger retrofocus lenses with a Distagon-like big front element tend to produce a large image circle, up to 56mm diameter rather than the 45mm needed to cover full frame, without much change in the distortion towards the extreme. Smaller designs like the Nikkor 20mm

*f4* or *f3.5* and the current Voigtländer VSL II 20mm *f3.5* based on them are much more convenient to use, but show a strong pincushion 'spread' as soon as you use the image outside a 50mm circle.

The second is the mechanical vignetting of the lens mount and filter rim. Some lenses may, for all I know, have larger image circles but can't be used as they have

permanently fixed lens hood wings, or an interior baffle to prevent stray light reflection inside the camera. A good potential tilt-shift lens would be the Sigma 12-24mm, as it's clear from the design of this full frame lens that when zoomed in towards 24mm, it probably creates a very large image circle – much the same way that its smaller brother, the 8-16mm, does. This lens will cover full frame from just a little over 12mm to 16mm.

Most conventional tilt and shift lenses allow a shift of around 11mm and a tilt of 8°, as the review of choices in *Cameracraft* #4 showed in a table of makes. This included the current Samyang 24mm *f3.5* TS which is the most recent dedicated lens of this kind to be designed.



Upwards 3mm shift (rise) used on Voigtländer 20mm *f3.5* VSL II, Kipon tilt-shift adaptor, A7R full frame, *f11*. A sea horizon would normally be dead centre of the image height for the chapel to show parallel verticals, or the building would converge slightly for this composition.

A year ago I looked at tilt from an explanatory point of view, but had not enough experience of different adaptor designs to see that they are not equal. The ball and socket Kipon tilt design, here, tends to move the image centre up the sensor.

In contrast the Kipon tilt-shift device keeps the radius of the curved tilt surface aimed at the sensor centre which improves sharpness across the frame



## Mm and degrees

Shift is directly related to image format, and a 12mm shift allows the horizon of a landscape orientation full frame shot to be moved all the way to the top or bottom edge of the frame, or two-thirds of the way lengthwise (in the 36mm direction). This is fairly extreme as PC lenses for medium format frequently offer nothing more. When the same shift is built in to an adaptor for mirrorless APS-C cameras, using 12mm would be more than extreme. Kipon's designs allow 15mm! It would be equal to having a 22.5mm shift on a full frame lens or around 30mm shift for a lens used on a typical medium format digital back. Such lenses don't exist.

So, when considering the specifications of shift adaptors, you need to assume the maximum shift offered may be off the chart before you start trying to find lenses able to handle it (*hint: there are none*). In practice up to 5mm shift handles the two most common situations for full-frame wide angle work, as I'll explain later.

Tilt has a similar relationship to focal length. If you are using a standard or long lens, such as a 50mm on APS-C or full frame, or a 90mm on full frame, you may well need several degrees of tilt to handle close foreground to infinity sharpness using an angled focus plane. If you are using a 17mm, 20mm or similar wide angle you'll need only a touch over one degree of tilt to bring the ground in front



For repeatability, vernier or rotary collar adjustments are better than the tiny life-size millimetre marks of the Kipon adaptors. Left, the tilt-shift scale seen in a good light; right, camera removed, the angle at which the scale is normally viewed makes the markings virtually invisible.



Russian rotary scale, left, 6° over 45°: Kipon scale, right, 6° over 6mm.

of you and a horizon positioned about 1/5th below the top of a vertical frame into equal sharpness, from a crouching or kneeling camera point, or a tripod extended to waist height.

This is where mechanisms which use a helical slot and a control ring, with the degrees at least a few millimetres apart on a scale, prove superior to actual degree markings engraved on a curved tilt surface. In fact, a tilt lens intended for APS-C or wide angle lenses on full frame

needs to have a very accurately repeatable scale marked in fractions of a degree, along with a good locking mechanism (*there are none*).

This leads me to criticise Kipon, the only maker to have produced a good variety of shift, tilt and tilt-shift adaptors to date. Their original tilt adaptor shown top left of this page is, like the LensBaby model, almost useless. It can not be reliably centred (zero tilt), or aligned for pure vertical tilt or horizontal swing, and it has no scale at

all. It is only useful for 'arty' miniature world effects and arbitrary setting to produce either sharpness in depth or extreme differential focus. Their shift adaptor is adequate with a very fine scale clearly visible from the camera front, and a simple release and lock mechanism, together with a firm 30° interval click stopped mount rotation.

Their tilt-shift adaptor, on my Sony A7R almost permanently, has the same shift scale aimed *back* at the camera with almost invisible markings. The tilt – which is the best tilt design in all other ways, see the photographs and caption at the top of this page – is hopelessly vague with a mere half millimetre per degree. You can try to remember that a certain set-up needs 'just beyond the first degree marking' and it will work to an extent, but fine control is not possible.

Study the photographs with overlaid optical axis paths above, and you will see that the Kipon tilt-shift requires



less image circle coverage for shots with tilt applied than their regular plain tilt design. This also applies to other tilt adaptors – both Chinese and Russian designs which I have bought have the same geometry, the same rotation point, as the early Kipon.

The Kipon tilt-shift tilt has a 'yaw free' rotation in Sinar terms. As the lens is tilted, the axis of the lens remains aimed at more or less the centre of the sensor, instead of being displaced. This makes for a sharper image across the whole field and avoids vignetting one end of the frame at full tilt.

So far all of the shift adaptors I've used have been subject to light leaks. This includes the remarkable Fotodiox Vizelex multi shot stitching device, an extreme version of a shift mechanism designed to allow mirrorless cameras to cover the image circle of a Hasselblad lens for a precision 'photomerge'. Several plain adaptors also have shown light leaks, overlooked by the designers – along with the problem of internal reflections from surfaces without matt



*5mm rise or fall was the maximum clean shift on full frame with the 20mm Voigtländer Color Skopar. Upward rise for the monastery church interior, top; downward fall for a museum interior.*

or flock treatment, and mechanical vignetting caused by parts getting in the way of the image. In every case, some D-I-Y improvement has solved the problem but better design would have eliminated it at source. It's not new. When I worked with technical cameras, pinholes in the bellows or badly fitting lens and back plates could do just the same. You can't expect two flat plates of metal with enough clearance to slide easily not to admit light.

## In use

Now to the practical report! After setting out thinking that tilt – the ability to extend depth of field from a few inches to infinity even at full aperture – would be the vital function I found that shift is far more useful.

In routine shooting situations like a room interior, a small amount of shift up or down will make the ceiling or floor fill two-thirds of the frame instead of exactly half

(assuming the camera at eye level is roughly equidistant from floor and ceiling). In churches where the windows and roof tend to be important, 5mm rise on my 20mm Voigtländer produced ideal results with perfect verticals. In museums where the floor and exhibit tables or cases counted more, just rotating my adaptor and lens reversed the emphasis. Outdoors in streets, the 5mm rise was generally just right. For landscapes, especially those taken from high viewpoints or beach and sea scenes, 5mm fall (also known as drop) worked well.

During a week photographing the island of Zante for our stock files, I started out using a 10-18mm zoom at 14mm on the Sony A7R (36 megapixels full frame mirrorless producing ultimate quality large images). Soon I found the sheer sharpness of the 20mm Voigtländer on my Kipon tilt-shift adaptor was compelling – and with the adaptor set to 5mm (a safe degree of shift, within the fully usable image circle) my only decision was to rotate the assembly to suit.

Views of churches, town squares, beaches and bays all benefited from the shift. The visual spirit level in the camera's electronic viewfinder ensured that before fine-tuning any composition was likely to have neat upright verticals or a level horizon. It's not critically accurate but lets you get the camera 99% straight in a second or so. Manual focusing with magnification proved just as quick, and more certain, than AF focusing in the same conditions.

This is how I found myself using the A7R equipped with this 20mm plus Tilt-Shift adaptor full time after the first day's shooting.

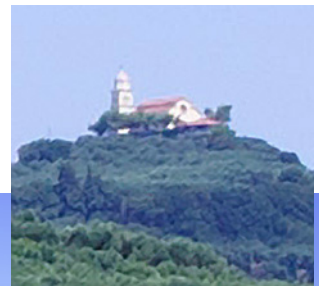
While any degree of shift beyond 4mm begins to show distortion that's hard to correct in *Photoshop* on frame-filling architectural subjects, most views feature enough sky area to hide this completely, or have a natural foreground where it's lost in the complexity of garden or landscape detail.

At home, I spent some time using the Sony A7R focus magnifier to work out a preset for tilt. With the camera at kneeling eye-level and the horizon positioned just above the top grid-line for a vertical shot, flat ground was focused from close to the lens to infinity with the tilt set to only just show the second degree marking. The precision of the Kipon adaptor is not great, and the degree markings on mine are at a very slight angle. Showing just one end of the second line produced the right 'preset'. Combined with manual focusing at a point 10ft/3m, these memorised settings made it possible to drop to squatting or kneeling position to capture a foreground to distant vertical view without needing to use the focus magnifier or make repeated fine adjustments.

The Kipon device lacks fine adjustment anyway. You can hardly set the tilt to anything more accurate than half a degree. Even the shift mechanism is vague. It is always 'crossed' with the tilt and you can't rotate the orientation of the two functions to be in line. Nor



*For both these 20mm shots, downward lens tilt was used. With the Kipon adaptor, rotation about the focal plane axis means tilt automatically adds drop. This makes the fixed crossed relationship of tilt and shift less of an issue. Detail in the 36 megapixel originals is extreme – from grains of soil in the foreground to things you can't even tell are in these pictures in the distance. Like a church on a hill...*



can you actually see the shift markings easily as the small metal plate faces the camera rather than forwards as it does on their shift-only adaptor. It's plain metal with black-filled markings. On return from a week using this, I decided to improve the visibility using white Tippex (the quick solution for restoring white engraving on lenses) and black Sharpie (ditto for restoring scuffed black corners, like

those on my A7R which already show alloy from a few months of light use).

The Kipon Tilt-Shift adaptor cost me £210 and locks me into using Nikon lenses. This type of adaptor is or was only made for M42 Pentax thread, Nikon F, Leica R and Olympus OM. There is no Minolta MD model, no Canon EF or Minolta A-mount. The four lens fits offered happen to be the deepest register, the

most thickness of original SLR body, which gives room for the TS mechanism. My best lens for shift coverage is the Canon FDn 20mm *f*2.8 but it needs an adaptor 4mm thinner, making it very unlikely Kipon will ever produce a TS version for this fit.

I have since acquired a Micro Nikkor 55mm *f*2.8 which focuses to 1:2 macro, and a classic 50mm *f*1.8 Nikkor which came on an FM body

and turns out to be one of the sharpest prime standard lenses I have found. I've tried two different 18mm Nikkor lenses and neither the original *f*4 nor later *f*3.5 AF had good enough coverage and corner sharpness.

In contrast to the almost formula-based use of the 20mm with preset tilt and focus, or a quickly set 5mm shift, the 50-55mm lenses need careful individual set-up and focusing at points across the frame. It's not so easy to memorise an accurate enough preset for typical shots. A larger scale for tilt markings – at least with clear half degrees if not quarter – is needed along with correspondingly finer control and locking.

The Kipon TS adaptor has at least proved firm (no rattles or poor fit) and light-tight. My next experimental purchase lacks that precision, but remains functional because of its size – large metal plate surfaces don't admit too much leaking light from a gap which would make a small adaptor unusable. This device is the **Fotodiox Vizelex Rhinocam** and its original purpose is to stitch together eight APS-C captures on a NEX back to cover one 6 x 4.5cm 'medium format' frame.

## Rhinocam full-frame

The Rhinocam was designed just before the full-frame A7 body series arrived, so every part of it is originally designed for APS-C only. It is also fair to say that its purpose is to make extremely large images, into the 100 megapixel plus range. For this the best body to use is either the NEX-7 or the A6000, both of which are 24 megapixels. My E-mount bodies are the NEX-6 and the A7R, giving roughly 16 megapixels per APS-C area.

The Rhinocam is normally used with a Hasselblad lens though mount adaptors are also available for Mamiya 645, Contax 645 and various other types. I think the best lenses on this device would be the Mamiya RB/RZ 67, Pentax 6X7 or similar 6 x 7cm SLR designs. I found a Hasselblad



*Below: the focusing screen can be used for composition.*



*The Rhinocam is a special type of shift mechanism able to move the frame of a mirrorless body sensor into multiple positions, to cover the field of a medium format lens.*



*Above: Rhinocam from above showing the A7R body slid to the left.*



*Above: the body dropped to the lowest position. Below left, four marks for sliding APS-C vertical frames; right, the catch for sliding up/down.*



C 50mm *f*4 Distagon black T\* at a reasonable price – I have every confidence in the performance of this lens, but can not say the same of the 40mm which would have cost at least double.

The procedure with the Rhinocam starts with a good solid tripod mounting for the assembly with lens. You then mount your E-mount, Fuji X or MicroFourThirds body on the back of this. The whole rear assembly has a sliding action to swap between an oversized 6 x 4.5cm focusing and composition screen, and the 'camera back'. Though this screen has no shading, no viewing hood, it's surprisingly bright for composing the shot. It could be used for focusing but not with the accuracy achieved by using magnified focus on the fitted camera. So it's more or less just an aid to aiming and framing.

The focusing screen does not tell the whole story as it's based on APS-C. When a full frame A7 body is fitted, the captured image mosaic goes well beyond the limits originally designed and will record a 15,500 x 9,200 pixel stitch working from six 7,360 x 4,912 full frames, limited by the coverage of the 50mm Zeiss lens and any mechanical cut-off. This is a format of 76mm x 45mm. It is possible to cover variations on this including 56 x 68mm, the classic full 6 x 7cm size.

To make each composite shot, the rapid-shift mechanism of the camera back must be operated as quickly as you can. It has small position pegs and a spring release catch enabling you to find the four extreme corner positions with 100% certainly in a single move, and four intermediate top and bottom row positions with just a little more care. The previous owner of my Rhinocam had added some pencil marks to indicate centred and additional positions, as the four-shot top and four-shot bottom sequence with a NEX mounted vertically didn't always have the right overlap for *Photomerge* (the *Photoshop* function found at the last item of *Automate* in



the File Menu). I used the central mark and the extremes of horizontal travel.

The precision of the Rhinocam is modest, with some play in the sliding assembly, which may leave the lens slightly out of parallel to the body and could in theory allow a light leak. In practice this doesn't happen but some kind of very thin flock or felt light-trap could improve the design.

In moving the back round, it was obvious that it could also act as a shift device. The 50mm Distagon focuses surprisingly close, certainly enough to shoot many table top still life subjects on either full frame or APS-C. These subjects are often best shot using lens fall, so they remain a normal parallel-sided shape but a high camera position allows the top of item to be seen. Photographing lenses or tins of beans alike, it's good to see the top, but also have no 'diverging verticals' caused by angling the camera down. The Rhinocam allows more rise, fall or cross movement than any normal shift adaptor. The picture of the Russian tilt lens and 20mm side by side was taken with this way.

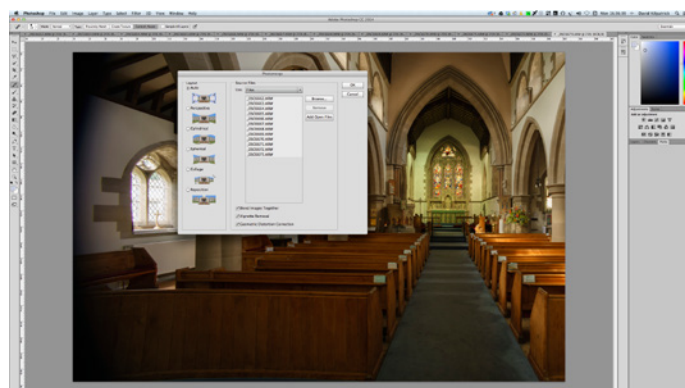
## Shift stitching

You can of course use any shift lens to produce stitch panorama or multi shot images. For example, if you use the Kipon Shift adaptor on a NEX or Fuji X APS-C camera with something like the Canon

*Above: a pure record shot, but one which at 394MB shows detail to a level exceeding medium format (four 36MB full frame exposures on Rhinocam, showing the limits of the 50mm Distagon field, stitched).*



*Stitched from 13 Canon 20mm f2.8 FDn lens exposures. Single centre frame 20mm field of view, below left; Photomerge (bottom) assembly allows choice of crops, right.*



20mm FDn lens, you can use a 10mm shift rotating the mount at 30° intervals all round, plus a centre shot. The result is an overlapped stitch from a 24 x 36mm sensor which can produce an 8,000 pixel square image from a 36 megapixel sensor like the A7R.

The 20mm lens is covering a field of 40 x 40mm, or a ratio to fit the same diagonal. It's matching a 16mm on full frame and producing a 175MB final image. Using a 24 megapixel APS-C body the same way, a 280MB image can be created. This is nothing like the Rhinocam's 400MB potential but that device can't shoot super wide angle.

The power of the *Photomerge* function in *Photoshop* makes it possible to stitch panoramas and supersized images without even using a tripod, let alone a shift device, if the whole subject is distant. Using the Rhinocam or a shift adaptor, parallax errors are eliminated and deep subjects with close foregrounds or structures like room interiors can be captured. *Photomerge* is also much faster and more accurate than panned frames, as the components are a perfect match, without losses caused by having to distort images to make them match up.

It took the investment in the Rhinocam and 50mm Distagon to alert me to the potential of my Kipon shift adaptors for merged multi-shot super wide angle. Since the click-stopped 30° rotation intervals can be firm, this needs both a solid tripod and care not to disturb the focus or aperture controls of the lens when rotating between shots.

To my regret I had returned my review 24mm Samyang TS lens before writing this article, as this would have provided an impressive multi-shot stitch using the full frame A7R.

There are obvious limits to multi-shot work. The scene must be static, without anything moving, and the light must be constant. A clear blue sky day without wind is needed for outdoor views – or very fast working!



# PHOTO QUEST

Led by Colin Westgate and run under the same name as the workshops he organises, Quest trips visit places that Colin has found appealing to photographers of all ages and all types of experience. I have, happily, been able to participate for many years in the sure knowledge that the small group will comprise like-minded people.

Icon Publications Ltd, publishers of *Cameracraft*, sponsored Quest through their *Minolta Image* and *f2 Freelance Photographer* magazines with the result that many readers of both titles could be found in the workshop and travel groups. And they have never been a Canon and Nikon party, as Colin himself used Minolta and has never made the camera make the focus of attention. *Cameracraft* does not sponsor Quest, as an international magazine with half the readership outside the UK, but after three years without a mention the editor asked me to write about my own experiences on their workshops, trips and tours abroad.

## Basics - or not...

For a start, you will stay in comfortable accommodation with great catering. Do not expect to lose weight despite the walking exercise!

Locations like Glencoe (Scotland), Seahouses (Northumberland) and Wester Ross (Scotland) are places I have visited more than once on Quest trips. Most recently we went the Hebridean isles of to Harris and Lewis, and ventures further afield have included India (where Colin Westgate teamed up to lead the group with another photojournalist, Colin Summers).

Other favourites offered by Quest are the Isle of Skye and

QUEST HAS BEEN ORGANISING PHOTO TRIPS FOR MANY YEARS, AND THOSE IN THE KNOW, LIKE PETER KARRY, GO BACK TIME AFTER TIME.



*From the series of old car studies which won Peter his 2011 TPOTY second place award.*

Iceland – which I have not been to yet, but watch this space! Quest also run shorter one or two day workshops, which I have also attended, often with presentations by well-known guest speakers.

## Faces or fields

As my favourite photographic subjects are people, it may seem strange to go on these trips that are mostly landscape oriented. However, I know I can depend on the fact that Colin has researched interesting areas that will prove rewarding, and so not have to spend my own time looking for these spots or tracing the often difficult inside knowledge on how to reach them and what time of year or day to visit. He includes non-landscape stops in these tours.

One such opportunity was in the Scottish Highlands, when we stopped at a vehicle restorer's yard – and the resulting photos won me a second place in one the 'Natural Elements' category in the prestigious global Travel Photographer of the





*Contrasts – dawn at Varanasi, 30°C, and the cruel snow that sweeps Glencoe – a little colder.*



Year competition in 2011. They met the theme to show the effect of rain, wind, snow even though in my results this was on man-made materials. Participants also know that if they need advice or guidance, Colin will spend as much time answering their questions as it needs, and is very good at putting participants at their ease. He has a long-standing relationship with camera clubs and the Royal Photographic Society and a national reputation as a teacher.

As you would expect, Colin uses all the hours that are great for photographing, so you can be prepared to go out for sunrise or sunset when the weather looks promising.

I have experienced temperatures at dawn varying from minus 14°C to 30°C – respectively in Glencoe and Varanasi. This may not impress out readers from Alaska or Florida.

Like me, you will probably love the unfamiliar light of dawn. You will discover a huge range of images in those hours – in Varanasi, the sun rose across the other side of the Ganges. With pilgrims and devotees going to bathe at this time of day, the only question was where to point one's camera.

## Which box?

If you are concerned about what camera to take, anything goes from compact systems like Panasonic and Olympus to the usual mix of Canon, Nikon and in my case Sony DSLR systems.

In fact, my journey along the digital route took a big step forward on one of these trips, because when one of my Minolta 9xi film cameras broke, Colin kindly offered to lend me his spare Sony A700 camera (they can use the same Minolta range of lenses) for the rest of the trip. Sometimes I still take my film cameras with me. A tripod is another item always taken, of a size that will be accepted for air travel, and I sling it under my backpack – although others may take ones that can be put into their suitcase.

Even though the group obviously all go to the same spots, it is amazing how very different photos are taken by different people – some may concentrate on close-ups, some on wide views, some using telephoto lens to focus on patterns in the landscape, and others on pure colour or even black and white results. Often, the group share a few of their images afterwards, and it becomes very apparent how each of us has seen a different aspect of the area – after all, that is what photography is all about.

## British itineraries

On the Glencoe trip, which usually takes place in late winter or early spring, if the weather is fortuitous, there can be lots of snow and ice to shoot giving opportunities to look for form, texture, and contrast. If the road conditions allow, Colin drives down side roads to find aspects such as waterfalls and streams, which can make great foregrounds or subjects in their own right. If the weather is very cold, you might decide to creep, very carefully, across frozen ground to get closer to interesting textures. The area – which includes such favourites such as Rannoch Moor, Loch Etive, and Buachaille mountain – is one of the most picturesque wildernesses in the UK. Red deer can be spotted and photographed, on one occasion for me at very close quarters.

Northumberland, well known for being photogenic, has an Eastern coastline offering a large variety of subjects from castles to wildlife. The Farne Islands are just offshore and although the organised trip does not include this, you can organise a visit for yourself. Holy Island (Lindisfarne) always features on this trip, carefully timed so that the causeway can be safely crossed by vehicle in both directions. There's a great variety of subjects on the island despite its small size. Many photos can be taken from the causeway itself and I have found that black and white works well.



*Above, low winter light on snow in Glencoe. Below, unexpected colour detail from the Isle of Lewis.*



Inland Northumberland trips tend to go to the relatively little-known National Parks and explore their many hidden valleys. As usual, once Colin has driven to any spot, everyone is told when to be back at the minibus (usually 60 or 90 minutes later) and then is free to wander to find your own preferred spot. One staple to visit is Roughing Linn waterfall, not far off the beaten track.

Some of the coastal beaches like Cocklawburn offer unique subjects, rocks containing fossils or unbelievably



*The geology of Northumberland can be photogenic but surprisingly hard to find, from coastal sandstone rocks above, to the few square yards which make up Roughing Linn, below. This waterfall is hidden in what seems at first to be a flat landscape of fields and small woods.*

colourful patterns, and beachcombers can be kept busy too. Dawn often sees the group on the beaches overlooked by Bamburgh or Dunstanburgh castles.

If you love the scenery in the Scottish Highlands, the organised trip to Durness and Wester Ross is another one to go on, and once again my visit there did not disappoint. Colin picked the group up from the airport and drove across to the Western coast, seeing snow-topped mountains and deep valleys on the way. Once ensconced in the hotel, it was time to go out to capture the setting sun.

Each day Colin then drove to separate sections of the Highlands, each with their own character. As usual, should one of us spot something that we wanted to photograph, he would stop for a short photo shoot. This included a spot where he discovered some interesting coloured and shaped boulders, after stopping near a ruined croft and abandoned car.



## Jewel in the crown

The trip to India was a first for Quest, and suited me perfectly because of my preference for taking images of people – visiting Kolkata, Varanasi, Darjeeling, and Sikkim. The locals were all unexpectedly friendly, even those living in conditions we would see as poverty, clearly having fun in their surroundings and especially happy to be photographed once you ask permission.

The colours just sing, and as I love bright colours, I was in my element. It may help to set yourself a project – it was suggested that one such might be shadows. There were so many highlights during our three weeks there, I struggle to mention them. I think of the kids who were excited to see themselves on the LCD screen, to the chai (tea) vendor who gave each of us a free cup of chai in individual clay cups, the historic but live Steam trains on the famous Darjeeling railway line, to the free lunch



*A young Kolkata girl looks up at Peter's camera. The tour group is welcomed, not an intrusion.*



*During the India trip, a theme of 'shadows' was set for one day to help inspire picture ideas, above. People were very happy to be photographed, like the man at Varanasi (left) and the woman of Kolkata (right). Completely candid shots were equally possible, as with the Varanasi composition below where no eyes meet the camera.*



placed onto a banana leaf at a Puja ceremony in Yuksom, or the sacred lake that left me with a real sense of tranquillity (also in Yuksom), a real contrast to the cremation Ghats in Varanasi.

If you are gaining the opinion that these excursions are flexible and will meet your needs, regardless of experience, you are right. The number of repeat customers speak for themselves. No need to ask yourself if you will have fun and return with some great shots – the answer will be yes. Just be aware that you may need to book early for the popular outings.

– Peter Karry



## About Quest

Quest Photography was established by Colin Westgate FRPS MFIAP APAGB in 1994 following a career in Banking.

“Having had a lifelong passion for photography, the opportunity to work professionally in the medium was one not to be missed”, he says. “The main function of Quest is photographic tuition, with the emphasis on personal attention and value for money. As well as leading workshops myself, a number of nationally known guest tutors are invited. These are photographers with special experience and expertise in their particular field.”

Visit [www.questphoto.co.uk](http://www.questphoto.co.uk) for more information.

# SUBSCRIBE TO NEW **f2**

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magazines for photographers



With our apologies for *Cameracraft* again being later than intended, it's not all entirely due to our taking back on **f2 Freelance Photographer** magazine at Icon Publications Limited. It's been a disrupted year so far for almost everyone involved in producing *Cameracraft*, both sides of the Atlantic.

*f2* has a history going back 25 years and started life as *PHOTOpro*, launched by Icon in 1989.

Working round the clock, we completed the first bi-monthly May/June edition to go on sale April 12th. We changed the frequency to six times a year and since the last *Cameracraft* went out we've printed three 68-page editions of *f2* and also three of *Master Photography* (see details, right). These magazines have also been brought into line with *Cameracraft*'s quality 150gsm (100lb) paper only using a silk stock similar to our centre portfolio section, throughout. For *f2* we are pleased to say that our UK news trade delivery is up by 30%, bucking the trend of declining circulation and proving that photographers – at least! – value top quality print reproduction.

*f2* is aimed at those who want to turn images into income (that's our latest catch phrase). Now you can also read it digitally, saving the high costs of posting such a heavy magazine worldwide. Scan the QR code or go to: [bit.ly/f2magazine](http://bit.ly/f2magazine) to see all the options for digital platforms.



*Master Photography* is our magazine produced for members of The Master Photographers Association, the only UK government recognised trade association for photographers. It mostly represents owners of High Street or home-based studio studios serving the public and local businesses.

In the last few years, wedding photography has changed with a high proportion of weddings held at special venues or destinations, giving wedding photography a much higher value, as a vital part of celebrations which may cost tens of thousands and take place internationally. The same process is also changing portrait photography, as high value commissions involve full day shoots at special locations. The profile of MPA is moving changing to keep pace with this.

MPA is expanding today in Australia, Singapore, Malaysia, Indonesia and mainland China. Members are also entitled to free membership of WPPI, the US organisation. The magazine remains focused on the UK market. The content is of general interest to anyone intending to become a full-time photographer, or to qualify as a licensed Master Photographer and progress to the two higher levels, Associateship and Fellowship. It is included with MPA UK membership, but anyone can subscribe directly to the magazine through our link:

[www.iconpublications.com](http://www.iconpublications.com)

You can apply to join the MPA through: [www.thempa.com](http://www.thempa.com) or by calling +44(0)1325 356555, or email [membership@mpauk.com](mailto:membership@mpauk.com) to request a membership pack.

## Three-year binder for *Cameracraft*

Our Cordex magazine binders will hold 12 *Cameracraft* issues, or three years in each bookshelf volume, and are black kraft on board with a silver foiled spine logo. You will want to look back on our editions in the future, and we will not fill your entire house with piles of magazines to do this! See our web page [www.iconpublications.com/cameracraft](http://www.iconpublications.com/cameracraft) for details of how to obtain your Cordex bookcase binders by mail.

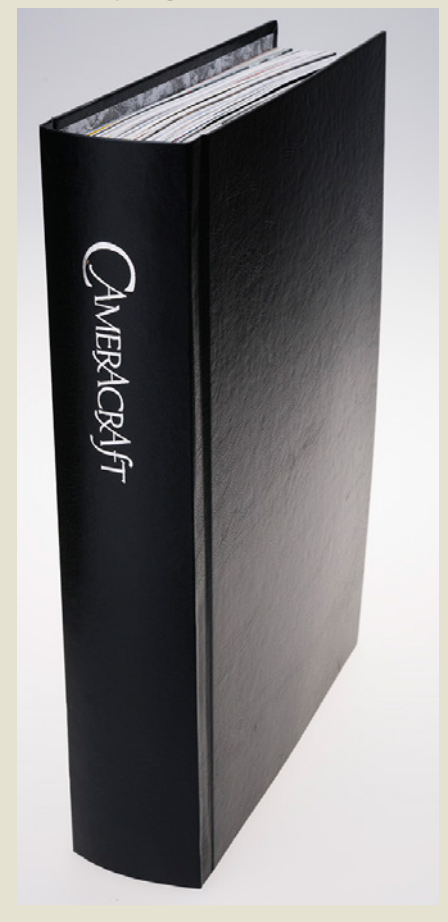
As an alternative to the binder, we offer a digitally printed annual you can order (*Cameracraft* issues 1 to 4, the first year, are now available in this form). It is a 176-page A4 soft-back volume which is printed on demand by Lulu at a cost of £29.27. It's a rather long URL so here is a shortened version:

<http://bit.ly/QF416p>

At the same time, a complete PDF of the first year is now available as a download and as a subscriber you have free access to this:

<http://bit.ly/1fMyEmh>

We also still have back issues of *Cameracraft* Nos 2, 3, 4, 6 and 7 but stocks of #1 have run out and we have very few of #5 remaining. Please email [subscriptions@iconpublications.com](mailto:subscriptions@iconpublications.com) for details of available back issues and costs for your postal area.



# DÉJÀ VIEW



## A DECADE OF DECLINE, CRASHES AND AUSTERITY?



Vincent Oliver took the lower view of the City of London skyline in 2005 using what was then a well-specified consumer digital camera favoured by professionals for pocket use, the Canon PowerShot S60. It 5 megapixels could almost match the last generation of DSLRs then, and almost match the current ones which were still mostly 6 megapixels. In a way, a view like this can never have too much detail. 5 x 4" film or a scanning digital back would have been justified.

In 2014 he photographed the same view, top, using a 12 megapixel Nikon D90, still a current model in the range though resolutions now have generally doubled in pixel count again. During a decade with a couple of mini-recessions, half of it spent in a climate of 'austerity', the runaway development of central London has continued with every new building competing in height to dominate a skyline where St Paul's Cathedral now seems insignificant. That is a structure which, as Vincent comments, seems massive when encountered. He recommends checking the Wikipedia page: [en.wikipedia.org/wiki/List\\_of\\_tallest\\_buildings\\_and\\_structures\\_in\\_London](http://en.wikipedia.org/wiki/List_of_tallest_buildings_and_structures_in_London)

The ominous dark tower standing tallest in this perspective is the Leadenhall Tower. To the right is the tallest building in the City of London, the Heron Tower. The Shard is not in this view. To the left of centre, the concave structure in 20 Fenchurch Street, known as the 'Walkie Talkie' building but more famous for focusing the sun's rays with its mirror-like windows and melting plastic trim on cars parked at the focus of this accidental solar cooker.

To see Vincent's work visit [www.photo-i.co.uk](http://www.photo-i.co.uk) – his site is always up to date with technology news and interesting images.

CAMERACRAFT PORTFOLIO

No 8

# STEVE WALTON



*St Nectan's Glen, Cornwall*

TAKING THE LONG VIEW



*Above: Normanton Church, on Rutland Water*





*Below: the Boxing Glove Stones, Kinder Scout, Derbyshire*





*Above: lone tree on limestone pavement, Malham, Yorkshire*





*Below: Bamburgh Castle from the north, Northumberland*





*Above: Ribbleshead Viaduct, North Yorkshire*





*Below: the standing stone circle of Callanish, Isle of Lewis*



# TAKING THE LONG VIEW PANORAMAS & TONE STUDIES BY STEVE WALTON

Steve Walton, like many dedicated landscape photographers, has other skills which command the kind of commission payments you don't get for turning out of bed before dawn and waiting for the perfect light. As a wedding photographer, he's used to coping with everything the British weather can throw at couples and cameras.

He's also an exceptional technician, an early master of colour management and printer calibration in the days when scanning rather than digital capture was the norm. Because he was able to achieve international award-winning results using film for the photography and digital methods for scanning and output, he kept faith with his original favourite format, the 6 x 17cm rollfilm panoramic camera. Now that 'real film' photography is enjoying a major revival, his Fujifilm GX617 is back in fashion and he is able to teach a new generation of landscape photographers the patience and fastidious care which produces the perfect print.

He's also continued to work with 35mm film and his beloved Leica rangefinder kit. Again, the revival of interest in traditional film values means that although there are no longer as many types of film made, there's no problem sourcing the ultimate fine-art materials like the Rollei RPX 25 ultra fine grain stock shown in the picture, right.

Steve is based right on the backbone of England, a mere hop way from the M1 motorway. Most people know Leicester Forest as a motorway service station but it's also a real place! This location has given him a great base to reach landscape hotspots like the English Lakes and the Pennines, but it is also right in the centre of the Midlands with many towns and cities on the doorstep, ensuring plenty of clients for his fine art weddings. He's both a traditionalist and a rebel, refusing to use digital post-



*Steve Walton waits for the light – something British photographers are used to doing. It's not full sunshine he's after, but the right quality of light for photographic tones.*



*The Fujifilm GX617 panoramic camera is no longer made and prices of used lenses and important minor parts – like the rare viewfinder – mean it's not a low-cost option like many film era systems. Steve's website blog 'Hard Light' has plenty of information on equipment.*



*Keeping it light, Steve loves the Voigtlander 28mm f3.5 on his Leica bodies, here seen with Rollei RPX 25 slow fine grain film and a green filter over the lens.*

processing effects on any of his work. His object is to produce a perfect photographic image not a piece of 'digital art', and even when working with digital capture, he treats the process the same way as working with film. He will use a hand-held light meter to check the contrast and direction of light, not just the exposure level, to confirm what his eyes see. He rarely relies on auto exposure, or AWB when shooting colour.

Steve doesn't use the square filter systems most landscape specialists prefer, but his 6 x 17cm camera 90mm wide view lens requires a centre filter when vignetting is not desirable. His preferred black and white Fujifilm ACROS 100 or Ilford Delta 100 can benefit from an 022 orange filter to render blue skies robustly. He also uses Hasselblad, Fuji 6 x 9cm rangefinder, and Cambo 470 wide angle cameras.

Part of the secret of top grade results from black and white is his use of an Imacon (now Hasselblad) Flextite scanner to create 4000dpi 16-bit monochromatic RGB files, as reproduced here. It's a scanner uniquely well suited to the 6 x 17cm originals.

Steve is a Fellow of the MPA, BIPP, and RSA and much in demand as a speaker and judge after winning many top awards. He is the author of *Contemporary Wedding Photography* (David & Charles, 2006), one of the most comprehensive and original wedding photography textbooks, now translated into seven languages and selling well.

He's a tour tutor for Authentic Adventures and a workshop leader at the 2014 Base Camp Festival in the Peak District. In the coming year he's leading groups in the Derbyshire, Gloucestershire and the Outer Hebrides – and in 2015, he's bound for Santorini and La Gomera.

You can see much more about all of his activities (and these workshops) at:

[stewaltonphotography.com](http://stewaltonphotography.com)  
– David Kilpatrick

Portfolio published by *Cameracraft* – see [www.iconpublications.com](http://www.iconpublications.com)



# LOSS, HOPE, FEAR AND DESIRE

Phil Bergerson believes that the art of seeing is becoming a lost art and that the nurturing and appreciation of visual thinking is also in decline:

“The act of contemplating a picture for a considerable time seems distant, a foreign idea, and the act of doing it without the intrusion of verbal articulation and explanation is almost unheard of.”

Mr Bergerson should know. At the ripe young age of 66, this Canadian photographer now sees himself as one of the last disciples of the likes of Rudolf Arnheim (“the father of visual thinking”) and Nathan Lyons (who influenced him on the importance of sequencing).

At first glance, Mr. Bergerson’s latest opus *American Artifacts* looks like snapshots of a post-apocalyptic walk-through of the United States. Plastic deer heads in an abandoned storefront window, where the condensation makes the mannequins appear to still be alive. Random signs like “What on earth are you doing?”

## Gary Friedman introduces ‘American Artifacts’ by Phil Bergerson



posted out in the middle of nowhere. Peeling, neglected posters proclaiming thoughts that someone, somewhere had considered worth sharing. But spend just a little more

time with these images and you’ll discover something more – a look at a vibrant, troubled society; the aftermath of what he calls America’s Lost Decade.

“Loss, Hope, Fear, and Desire – those involved in the pursuit of the American Dream bounce back and forth between these emotional and psychological states. I’m trying to look beneath the surface of things to find some personal expression of someone’s life experience in America: a shard they have left behind, either knowingly or unconsciously.”

And while his images may appear to be just a commentary on the USA, the work runs much deeper than that.

“Initially, people often react with uncomfortable laughter. Then they catch themselves and ask ‘Should they be laughing?’ Then they start reconsidering what’s going on. Oh, look at these crazy people... then they begin to reflect on themselves in relation to the message makers represented in the pictures.

“I’m not laughing at anyone” Bergerson says. “I empathize with those people whose daily struggle is reflected in the subject matter I find on streets of America.”



Above: opening image of the book, and one spread, both from *New York, New York 2010*



Above: facing images from pages 38-39. Kenner, Louisiana, and New Orleans, Louisiana, 2006.  
Below: Cheyenne, Wyoming, 2007.



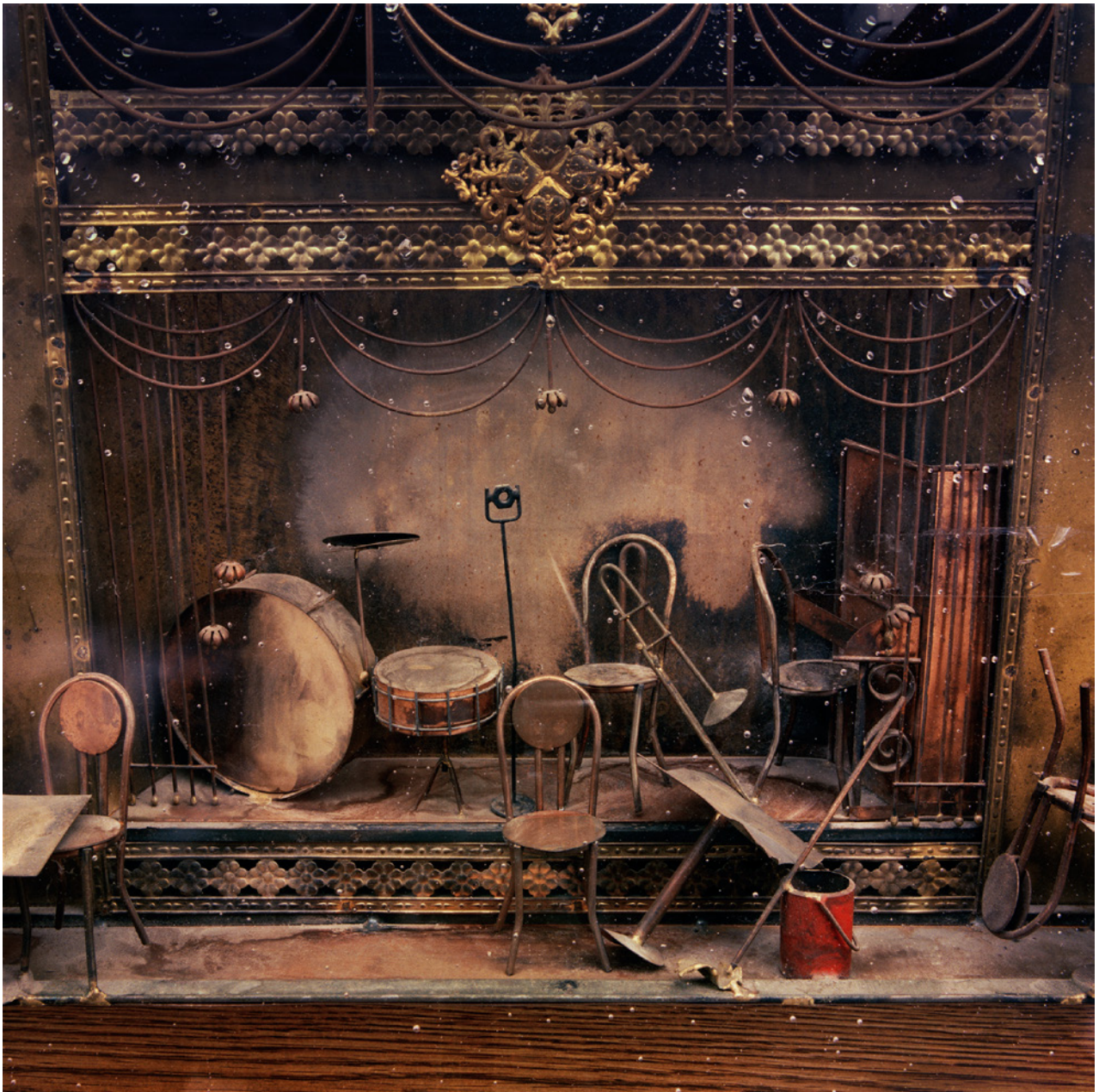


Above: facing images from pages 86-87. Lincoln, Nebraska, 2005 and Le Mars, Iowa, 2007.  
 Below: Philadelphia, Pennsylvania, 2003.





Above: facing images from pages 134-135. Dallas, Texas, 2005 and Zanesville, Ohio, 2006.  
Below, Syracuse, New York, 2013.





Above: facing images from pages 134-135. Dallas, Texas, 1997 and San Marcos, Texas, 2006.  
 Publisher: Black Dog Publishing, January 2014. ISBN: 9781908966353 (sold out and currently being reprinted).

## Motivation

This collection represents the culmination of over 25 years of wandering through the states. Like many noteworthy projects, it's not something he initially set out to do. "When I was 45 years old, I stopped and asked myself 'What is the meaning [of my photographic work]?' I realized I wanted to change directions in order to say something more significant about the world around me." He stopped exhibiting in 1989 to reinvent himself and shortly thereafter found himself in Pittsburgh, and it just hit him. "Here there was so much more exciting material to photograph! After a few years of shooting, I stood back and looked at my strongest 100 photos, and realized 'My goodness, I'm making a presentation of the culture of the US!'" Twenty-five years later, he feels he has created a personal poetic portrait of America and an insightful statement about the human condition.

Could he have done this project in Canada? Absolutely not. "The thing that intrigues me about Americans is their bravado ...their comfort in stating even in public what they think about any topic – something Canadians are more fearful of doing."

## Sequencing

Bergerson demonstrates in his book that the power of the image can be magnified greatly when images interact with other images – using juxtaposition to create more complex meanings. For example, one of the pictures is of a BBQ grill shaped like a gun taken in Texas. "You laugh at first, then it's not so funny. Just look at this thing! Then you look a little more and realize it's pointing at traffic. All the little nuances of content makes it more complex. Is it a critique of McDonalds [*also clearly visible across the street*]? What are the boots about? What is the picture set against?" And the picture it's paired with? A side of the building with a neon sign that just says "Things" [sic].

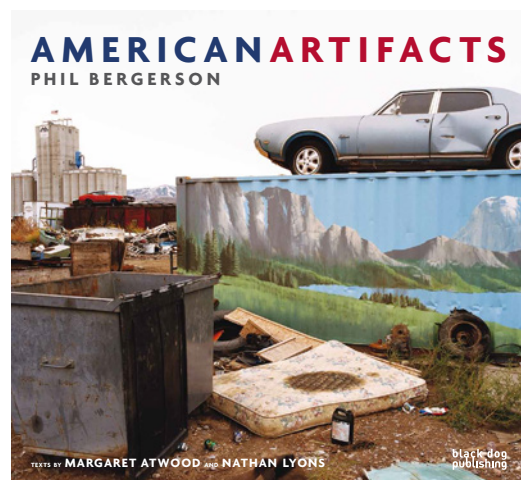
"I've learned from the best in sequencing... Walker Evans, Robert Frank, Dave Heath, Nathan Lyons. You can make something much more than just the presentation of your best photos. Most people show just their best photos organizing them in book form mainly so that the pictures look good together, ensuring that they don't hurt each other. For me, the greater challenge in making a book is to sequence the images so that each preceding photo builds

on the next, building layers of meaning an intertwining the various themes. Forming relationships, that's the key. Few today seem interested in the art of sequencing, but it is my passion." (The book's afterword contains a scholarly essay on sequencing by Nathan Lyons himself, which delves into language, meaning, emotions, and human consciousness.)

"The process waits until you have a sufficiently large body of work," Bergerson explains. If I do it well, that is, if I develop a heightened meaning through the sophisticated sequencing of my images, then my audience will have the opportunity to enter into a deeper experience of my subject matter and

ultimately gain more insight into the human condition of those souls that my pictures are speaking about."

The process of image selection can be an arduous one. "I look at them in as many different ways as possible – content, meaning, themes, formal characteristics, etc. – to find out what they are all about. I keep doing this over and over again until I am sure that I understand them as fully as possible. All of this helps to develop up the more refined, educated intuition required to adequately tackle the challenge of forming my final dynamic sequence. For me it's not obsessive; more like the joy of the process."



# DUSK TO DAWN

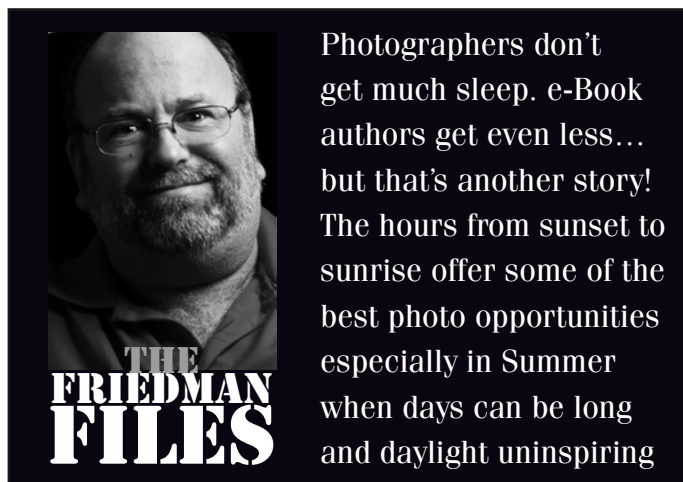
As a stock photographer, I know my images won't sell unless they have strong color which the eyes naturally gravitate toward. And for travel photography, the most reliable way to get that strong color is to shoot during the golden times of dusk and dawn. This even applies during periods of the year when the weather is otherwise blah and overcast – the “golden hour” shortly after sunrise or before sunset can help bring color to your sky and balance the ambient and artificial light in a striking way.

Sometimes the biggest obstacle to being in the right place at the right time to get these great shots has little to do with your equipment or your dedication. You may be traveling with family who may not be as supportive of your obsession nor be willing to wait for the right time.

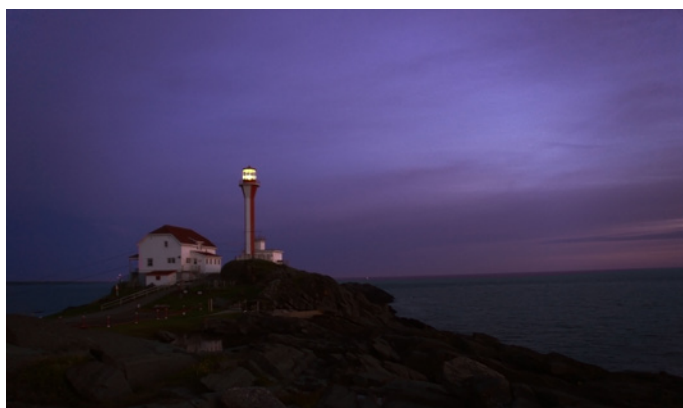
The solution is to wake up extra early and slip out while everyone else is still sleeping, get your shot and be back in time for breakfast. They may want your presence at the barbecue or dining table around sunset, but they won't miss you at sunrise!

The techniques required to get these shots are as old as the hills: scout out your location, have an idea of your composition ahead of time, have a strong subject with no distracting background, use a tripod, and wait for the light levels to be “just right” – where the light and color from the sky match the ambient / man-made light from your subject. For me, that can often entail shooting quite a few pictures just before and after the perfect time, and selecting the one “best” when I return home. I shot that way in the days of film too (as several of these examples show), but thank goodness digital no longer makes that such an expensive proposition.

My stock image website is filled with examples like these. Some of my favorites



Photographers don't get much sleep. e-Book authors get even less... but that's another story! The hours from sunset to sunrise offer some of the best photo opportunities especially in Summer when days can be long and daylight uninspiring



are shown here. Sometimes the challenge is even greater when you're shooting something iconic that's been photographed thousands of times by others. In that case I try to study what's been done before and try to do something different. The first two shots are of the iconic Garden Towers at Singapore's Marina Bay Sands hotel (*top and center on this page*). I got up at 4am to catch this sunrise.

The next (*bottom*) is a famous lighthouse in Nova Scotia which has been photographed to death by the locals. What made this shot different was the light and the color. Insights into the processing of this shot can be found in my blog at:

<http://bit.ly/WOXAni>

One of the hardest things to remember when shooting pictures in twilight is that your picture will rarely look the way that you remember seeing it. Cameras respond to light differently than the human eye/brain does, and you have to take this into account when worrying about highlights and shadows being visible. The picture (*facing page top left*) of the lecture hall at the California Institute of Technology (taken on an evening when Prof. Stephen Hawking was giving a talk) had a big risk of having the highlights blow out. Fortunately this image was shot on color negative film so I had a safety net – highlights for film don't “blow out” as easily; instead the information “blocks up” but you can recover it using some careful darkroom work.

Today's digital cameras aren't so forgiving, and so it's now very common to take a similar shot using a tripod and wide bracketing, and letting *Photoshop's* “Merge to HDR Photo” function take the best of each exposure and merge them into one usable shot.

Another little known trick involves photographing subjects by candlelight. You



*Above left: the Beckman Auditorium on the campus of Caltech. Contax T3, Fujicolor 200. Above right: A Nepali resident by candlelight, handheld. Yashica T4, Fujicolor 400, unusual fill flash. Below: fireworks on Independence Day in Boston, Konica Minolta Dimage A2, several exposures merged in Photoshop.*

*Facing page: the Garden Towers at Singapore's Marina Bay Sands hotel. Sony A99, Minolta 80-200mm and 11-18mm. Bottom: Cape Forchu lighthouse, Nova Scotia. Sony A900, Minolta 24-105.*



can sometimes make the image look more compelling by using a fill flash set to something very low, like -3 stops. The example top right of the last page was taken in Nepal using a point-and-shoot (I'm no snob!) over which I had no control over the flash output. So I held two of my fingers in front of the flash, helping to enhance the already red/yellowish glow of the image.

And I can't think of anything more difficult to photograph than fireworks! Which means if you manage to do it, it can be a sellable shot. You never know where the bursts will be, sometimes smoke gets in the way, and if you forget to turn off your camera's dark frame subtraction feature (usually called *Long Exposure Noise Reduction*) you're in for a whole lot of stress while the show goes on but your camera locks up for the duration of your previous exposure...

There's another trick I use which can help take this effect to the next level. The idea of adding motion to a longish exposure is a sure-fire way to get a "Wow!" effect. On this page I show three examples of this. The first one is a 20-second time exposure of downtown Los Angeles, but during the last five seconds I zoomed in (who says primes are always best?). With this technique only the artificial light sources register with the camera – the ambient is too dark to make a difference, which is why the picture remains sharp despite the zooming.

The second one was taken from the back of one of San Francisco's famous cable cars, and employs the law that "everything that moves relative to the camera appears blurry". Well, the taxi cab behind us was traveling at a similar speed to the cable car, therefore it appears to be more stable than any of the buildings to the left or the right. Movement!

The last one uses the same principle, where the evidence of motion becomes the entire shot. Here, an indoor merry-go-round was photographed for 20 seconds. Look carefully and



*Top: Downtown Los Angeles, Sony A900, Zeiss 24-70mm zoom.*

*Center: Things that move relative to the camera will be blurred in a long-exposure shot (Dimage A2).*

*Bottom: The same principle applied to moving subjects and long exposures. Merry-go-round in Santa Monica, California (Sony A77).*



you can see some of the legs of the wooden horses.

The last image in this article is an example of how you can do almost everything wrong and still have it come out OK. Shooting into the sun? No problem. Bad light and color? Check. Fog? Sure, why not? The only thing that made this shot work was the subject matter and the composition.

We started out with two dawn shots which look like sunset and dusk, and we're ending with a sunset which looks like dawn – because of the mist. A foggy sunset on Brier Island, Nova Scotia, offered perfect conditions for the image.



[www.friedmanarchives.com](http://www.friedmanarchives.com)

## FROM THE FRIEDMAN ARCHIVES



*There was a thunderstorm in downtown Kuala Lumpur, Malaysia. I wanted to capture it, so I did what I usually do for lightning: Camera on tripod, low ISO, small f/stop, continuous shooting, and use a cable release with the shutter locking mechanism so it continuously takes pictures, and hope for the best. Lots of lightning over the downtown buildings, but for some reason none of it showed up in the images. (An occasional frame got lighter... that was it.) My theory was it wasn't dark enough; and that a bolt of lightning was trivial compared to six seconds of light per exposure. What to do? When I got back to the hotel I looked up an image of lightning from Google Image Search and photoshopped it in. Was this ethical? It is if I don't mislead you about how I got it. My goal was to illustrate an event that I actually saw, kind of like an editorial shot which goes along with an article about lightning. This picture quite accurately represents what I saw with my eyes.*

# X3F THE FOVEON STORY

As the consumer and professional markets continue to focus on colour filter array sensors, most with fundamentally similar architectures, Sigma's ownership of Foveon yielded a new concept for 2014. The **dp2 quattro** marks the release of a totally new concept and approach to image capture, and it carries industrial design as unusual as the sensor within.

That Sigma's small camera presence – by volume, almost insignificant beside Canon or Nikon's numbers – is also where photographers can find innovative, unusual approaches is not a surprise. Taking risks is a Sigma trademark, pioneering interchangeable mounts, in-lens focus confirmation, optical image stabilisation at low cost, and all the while operating a leading facility in Japan that has previously supplied optics for many high-end manufacturers and marques. When the digital camera market was just beginning, the SD9 was a bold, aggressive move by the firm.

Behind Sigma's digital presence is a cutting edge electronics firm. **Foveon** takes its name from fovea centralis, the area of highest acuity on the retina, and was founded when digital photography was still enjoying the experimental, diverse period before mass-market consumer demands shaped the development. Co-founder Carver Mead had already enjoyed decades as a pivotal figure in microelectronics and computing, and the late Dick Merrill was to become an icon amongst users of the sensor, passionate and willing to communicate directly with

**Richard Kilpatrick has been using the unique three-layer stacked RGB Foveon image sensors since the concept was first commercialised. Here he explains its history and development.**



*2002: two years ahead of its time, the Sigma SD9 produced small images by today's standards but a fair match for the 4 to 6 megapixels of Nikon and Canon DSLRs of that generation. Sigma was already a DSLR manufacturer, and made the Kodak DCS Pro C Canon-mount 14 megapixel full-framer in 2004, using the many parts of the SD10 in the conversion. 2012: the Sigma SD1 Merrill brought medium format quality to the 1.5X sensor format, capturing 16 perfect megapixels but able to create 45 megapixel JPEG files from the AA-free, non-Bayer sensor.*



those photographers. Another Caltech alumnus and former Xerox PARC/Apple employee, Dick Lyon, would bring DSP and neural processing skills to the team, and amongst others, fabrication and design innovator Federico Faggin (*CEO from 2003-2008, founder of Zilog, inventor of silicon gate technology and the Intel 4004*) brought polysilicon interconnects to the chip, and visionary Misha Mahowald would combine understanding of biological vision and a passion for electronics.

From the very beginning, the Foveon imager set out with a goal to capture the most complete set of data possible. The late '90s approach to colour capture was much as it is today; monochrome sensors looking through filters to capture a luminance value. Some solutions used three sensors and a beam splitter, some used three captures and a rotating filter wheel, and of course, the dominant technology would prove to be the single chip, RGB colour array pioneered by Bayer. This model discards a surprising amount of light and from a monochrome point of view, also changes the luminance value of smooth gradations at a pixel level, as it is not panchromatic. Processing power to interpret the image and provide a full colour output is also significant, though assisted by capturing less data per channel initially.

Initial experiments by Merrill, when exploring the potential for CMOS imagers, revealed an interesting property. Though the technology of the time was unable to produce circuitry within the chip at a small enough scale to yield good

resolutions, he discovered that sensors at different depths embedded in the chip would respond to different wavelengths of light. Users often think in terms of red, green and blue – and for the purposes of marketing, understanding, that makes sense – but for the silicon imager, the wavelengths matter, not so much the perceived colour.

Now commonplace, CMOS architecture was still unusual for an imaging sensor and put Foveon ahead of the pack. The initial Foveon design used three sensors and a complex prism to capture a full colour image. This bulky technology made it into a stillborn Hasselblad project – the **Dfinity** – that promised to eliminate the false colour moiré of colour filter array sensors.

Merrill continued to develop the three-layer process whilst Foveon worked on marketing the prism system at a time when digital cameras with a rotating filter set were considered acceptable. Diversions such as approaching Kodak, and developing a 16Mp (vastly more than anything offered at the time) CMOS monochrome sensor did not help; at least, not until Kodak themselves promoted their own 16Mp CCD.

*photokina* 2000 proved to be Foveon's decisive moment, as delegates drawn to their stand by the impressive high-resolution reproduction included the founder of Sigma, Michihiro Yamaki.

Undeterred by the lack of a functional 16Mp chip in mass production, and assured by Mead and Merrill's demonstrations of the new 3-layer process, Yamaki signed up to build a camera based around the innovative sensor. In hindsight, both firms put themselves in the position of startup when the other elements of the industry were forming unequal partnerships, mature camera producers buying from established CCD suppliers – and now Foveon bet its success on a firm that made entry-level SLRs, and



*Any colour filter array will produce adjacent pixels of varying value (brightness) for a single colour even if the end result is a monochrome conversion. With a typical RGB array, a smooth skin tone will be captured at a pixel level with widely different levels of brightness (as represented above). The image processing firmware has to smooth out the resulting 'noise' when calculating colours from adjacent pixels. Foveon's process initially had every pixel recording three 12-bit channels, adjacent pixels having the same value for an even tone. The resulting files had impressive latitude and smooth tonal quality, seen in monochrome conversions as well as in colour (example, right).*



*Below: I use the SD1 for things like cosmetic product shots because of the absolutely accurate, reliable colour reproduction in 'Neutral' mode, and the perfect retention of detail on textures like the top of the colour pads. Sigma's own advertising has often featured critically sharp beauty shots untouched by the heavy smoothing and retouching so common today, but the printed page can not reproduce the tiny hairs and pores visible on the original files. Because of this, few photographers understand how good the Foveon image is unless they are able to shoot their images using the cameras.*



Sigma bet their digital SLR future on an unproven sensor.

Sigma's body design would debut at PMA in 2002, less than two years after shaking hands on the basis of an unproven chip. The SD9 made waves in the industry not only for the break with CCD and traditional colour filter array capture, it also established a new price point for a professional digital SLR. The 3.4Mp spatial resolution involved capture of 10.4 million values, and allowed the omission of the optical low-pass filter that both limited the ultimate resolving power of a CFA sensor and allowed cheaper lenses to look tolerable. At this time, cheaper lenses were what Sigma specialised in, and the SD relied upon the interestingly derivative SA mount.

The SD9 shot in raw, with software that initially did a poor job of removing the base level noise. After a couple of firmware revisions, by 2004

the SD9 would match the results of its successor, the SD10; by this time, affordable DSLRs were commonplace and the Bayer sensor had refined the pixel pitch to the level that 6Mp was the standard.

The same year Sigma released the much improved SD10, Mamiya showed the 645-derived 22Mp ZD, Canon launched the 16Mp 35mm 1Ds Mk II and Fuji showed their APS-C enhanced Bayer SuperCCD 12Mp S3 Pro. The SD10 continued to perform astoundingly well on detail, texture and natural colour, albeit at comparatively low ISOs. It was also possible, by removing the hot-mirror filter positioned behind the lens mount, to shoot IR and near-IR – a feature Sigma have retained to the current SD1 Merrill.

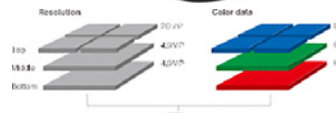
Sigma's first properly competitive DSLR, the SD14, shipped in 2006, delivering in camera JPEGs and a 4.69Mp x3 sensor. This evolved into the cheaper, faster SD15 whilst Sigma focused on a new genre – the APS-C compact camera with a fixed standard/wide lens. The DP was not the only compact with a Foveon chip, however. Briefly sold by World Wide Licenses under the Polaroid brand, the x530 carried a 1.5Mp x3 sensor in a cheap zoom body. The camera was hampered by Polaroid's confused brand identity and poor manufacturing, and faded into obscurity.

Announced at *photokina* 2006, and so well received as a concept Sigma redesigned the electronics to improve performance before launch, the DP1 delivered optical clarity the equal of some of the finest classic cameras, and was steadily evolved after Sigma's purchase of Foveon in 2008.

In 2010 the big *photokina* announcement was the 15.4Mp SD1. It was rapidly followed by the current 'Merrill' generation offering the same impressive overall capture of 46Mp – in practical terms excellent 70MB files matching conventional 24Mp competitors – and excellent 19, 30 and 50mm lenses.



*The dp2 quattro's unique design and the new sensor architecture*



*All the Foveon sensor DSLRs from Sigma share the removable IR cut filter mounted behind the lens. This design keeps the sensor itself free from a thick 'filter pack' and has other benefits – see below.*



Sigma's new Global Vision ethos inspired a new look at the camera range, and the almost experimental video recording of the original DP was dropped to focus on still image quality. New colour modes, and monochrome modes, were joined by more control and sophistication in the software. At the time of writing, Sigma's Merrill raw image formats remain unsupported by mainstream (Adobe...) solutions.

2014 marks the first deviation from the simple three-layer formula, though the crucial aspects of it remain. The dp2 quattro is a bold, distinctive camera, with the proven 30mm f2.8 lens on a curious, angled body. Under the hood, the sensor retains a three layer capture – yet the 5424x3616 spatial resolution only applies to the blue, top layer. Full colour information is added with the green and red layers operating at a quarter resolution of 2,712x1,808. This 19.6Mp output file is constructed from 29Mp of data – reduced from the 46Mp of the Merrill series, making in-camera processes faster. In real-world terms,



*At today's secondhand prices, an SD10 or SD14/15 (better) with its internal IR cut hot mirror removed and a suitable visually opaque IR filter used over the lens will produce better results than a conventional Bayer camera modified for IR. You must compose and focus without the 'black' filter however. The SD1 and SD1 Merrill also offer an impressive resolution and quality at a higher price, ideal for monochrome processing as well for IR and other colour-filtered capture. Like black and white emulsions, the Foveon sensor can be used with filters such as 4X orange, 8X red and the results resemble traditional use of panchromatic film.*

the dp2 quattro's better noise performance allows it to exceed the quality of a 36Mp Bayer in the right conditions, though as ever it is best to think of it as the best 19Mp capture around, rather than a convoluted Bayer equivalent of 33Mp as Sigma market it.

Early testing with the new camera suggests that this is the first Sigma to perform acceptably at 1600 and 3200 ISO. Noise is strong at 6400, but controllable. The out of camera JPEGs are impressive with natural true-to-life colours, and textural depth that shows subtle detail; as the first outing of a new sensor architecture it shows much promise.

– RTK



*This article is dedicated to:  
Misha Mahowald, 1963-1996  
Richard B. Merrill, 1949-2008  
Michihiro Yamaki, 1933-2012*

*This sample image from the dp2 quattro with its wide-standard angle of view 30mm lens displays exceptional feather detail at pixel level (courtesy of Sigma UK)*



# CAMERACRAFT

## REARVIEW

*The volcanic park of Bromo Tenga Semeru in East Java, Indonesia, is a major tourist and photographic attraction. Visitors reach the Mount Bromo viewpoints with the help of guides and horses, rising early and trekking before dawn in the springtime dry season. The usual images are the volcanic peaks and craters smoking in the low rays of the sun.*

*Jasman Ashar joined a group making this photographic pilgrimage and amongst his excellent landscape shots – all taken using the Sony A7R with Carl Zeiss 24-70mm f4 lens – we found this very different out-take. He photographed his guide and horse taking a break while the photographers ranged their tripods nearby. He used ISO 640, 1/30th at f4, at 42mm – the wide open image quality proving fine from corner to corner.*

*You can see more of Jasman's pictures on Flickr –  
<https://www.flickr.com/photos/107716950@N03/>*



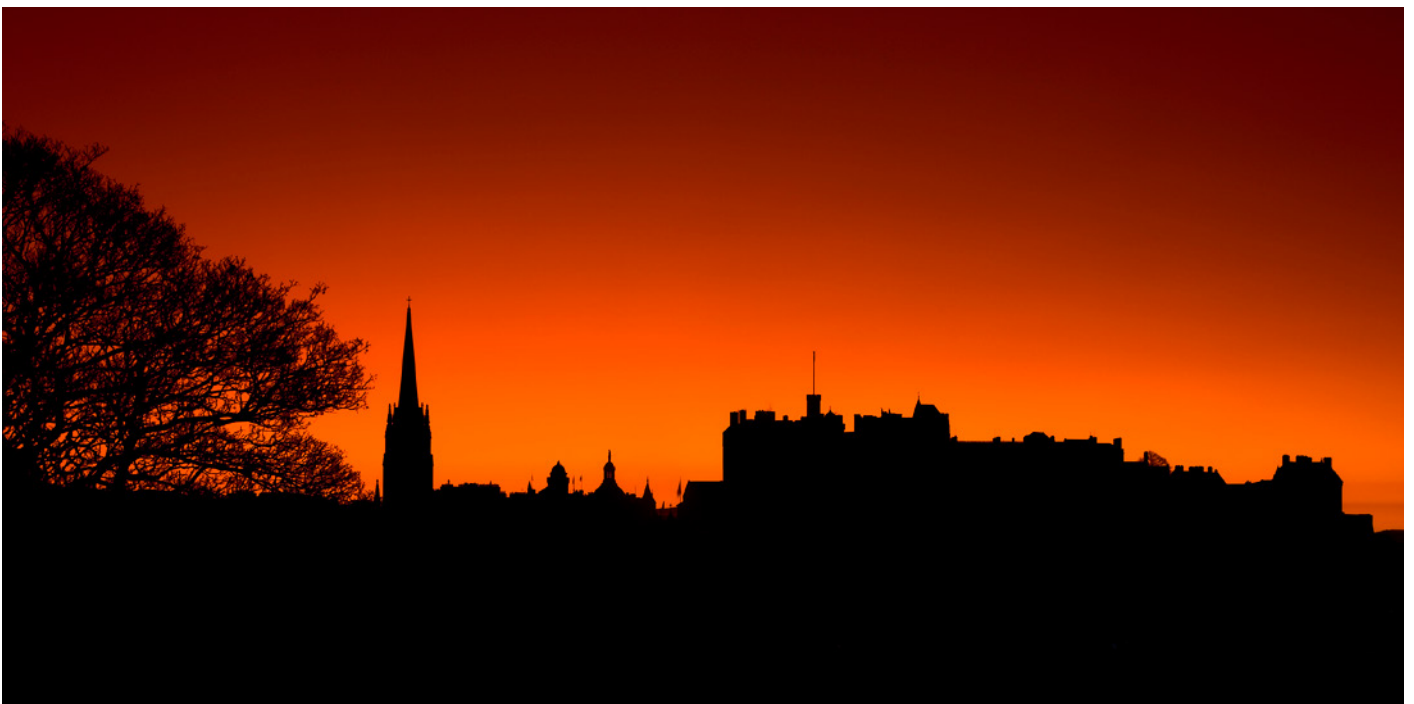


Left: Ron Carter photographed by Basil Clunie of Evanston, Illinois. Basil has a lifelong association with photography in the community and the arts world. He is a member of the National Association of Photoshop Professionals and works in 'environmentally-friendly media.'

Below: Edinburgh skyline after sunset, by Robin Chapman. Nikon D300 with 18-200mm *f*3.5-5.6 Nikkor zoom lens set to 62mm focal length, 5 seconds at *f*22 at ISO 100. By the time you read the next issue of Cameracraft, this iconic silhouette could be all set to represent a newly independent country... and as skylines go, it says it all when compared to the London skylines on our *Déjà View* page!

Top right: camel tracks, a herd of camels and a balloon over the Al Ain desert in the UAE (taken from a balloon using a Sony Alpha 900, 24-70mm *f*2.8 Carl Zeiss, 1/640th at *f*6.3, ISO 200). By Stephen Evans – [www.seviews.com](http://www.seviews.com)

Bottom right: from a set photographed for *Doha News* by Sally Crane, at the unveiling of a Richard Serra installation in the Qatar Desert in April. The art installation consists of four steel plates that are about 15m tall and is called "East-West/West-East," located some 60km outside of Doha at the Brouq Nature Reserve near Zekreet. "Finding the site isn't too difficult as the sculptures are very tall", she says. "You do need a 4x4 though as it's pretty rough terrain." Freelance work by non-residents is not permitted in the UAE, so this assignment was an unpaid commission, but one which permitted Sally to secure access and obtain shots for her picture library and other worldwide media. [www.sallycrane.co.uk](http://www.sallycrane.co.uk)







*One of the great spectacles to be seen in the sub-Antarctic region of South Georgia is the colony of King Penguins on Salisbury Plain. Photographer Dominic Lee along with his son Rob travelled for nearly a month around the Antarctic making many landings and even camping out on an ice covered island for a night. Dominic runs a wedding and portrait studio in Dublin and his hobby is travel. He has been to 54 countries in the world. His children Shakira (24) and Rob (22) have also got the travel bug and to date have been to 35 countries.  
Shot on a Nikon D800 with a 24-120 Nikkor lens.*

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# CAMERACRAFT REARVIEW

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