



The Newsletter of E.J. Peiker - Nature and Travel Photography

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Welcome to the 19th year of the newsletter from E.J. Peiker, Nature & Travel Photography and www.EJPhoto.com. In this quarterly publication, I share with fellow photographers my photographic experiences, photo equipment reviews, photography tips, processing tips, and industry news. I also inform subscribers about upcoming workshops and products that I offer. All content is copyrighted by E.J. Peiker and may not be reproduced but it is permitted to forward this newsletter in its entirety only. If you would like to be added to the mailing list, unsubscribe, or access back issues, please visit: <http://www.ejphoto.com/newsletter.htm>



Caineville Badlands (DJI Mavic Pro)

EOS R5 – Has Canon Finally Caught Up?

I have received several emails and messages regarding the new Canon EOS R5 and what my thoughts are on it for both Landscape and Wildlife photography. While I haven't yet photographed with this camera, I have spent a lot of time studying it and also reading technical documents that 99.9% of photographers don't ever read but rather wait for technically inclined people to dissect them and then share their thoughts in language more suited for the photographer.



To start with, there has been a lot of consternation and massively over-amplified internet complaints but those are almost exclusively on the video side. They revolve largely around the fact that Canon overhyped the camera's internal 8K video capabilities but then installed a timer circuit that cuts off the video after relatively short periods of time in an apparent effort to manage internal temperatures in the camera. Furthermore, even 4K video seems to have some significant limitations in recording time due to this design choice by Canon and there also appears to be a very long cool-off timer before the camera can be used again. Canon has started to address some of this with firmware changes but needs to do more. That's all I'm going to say about video since I am not a videographer and people come to me for information on still photography.

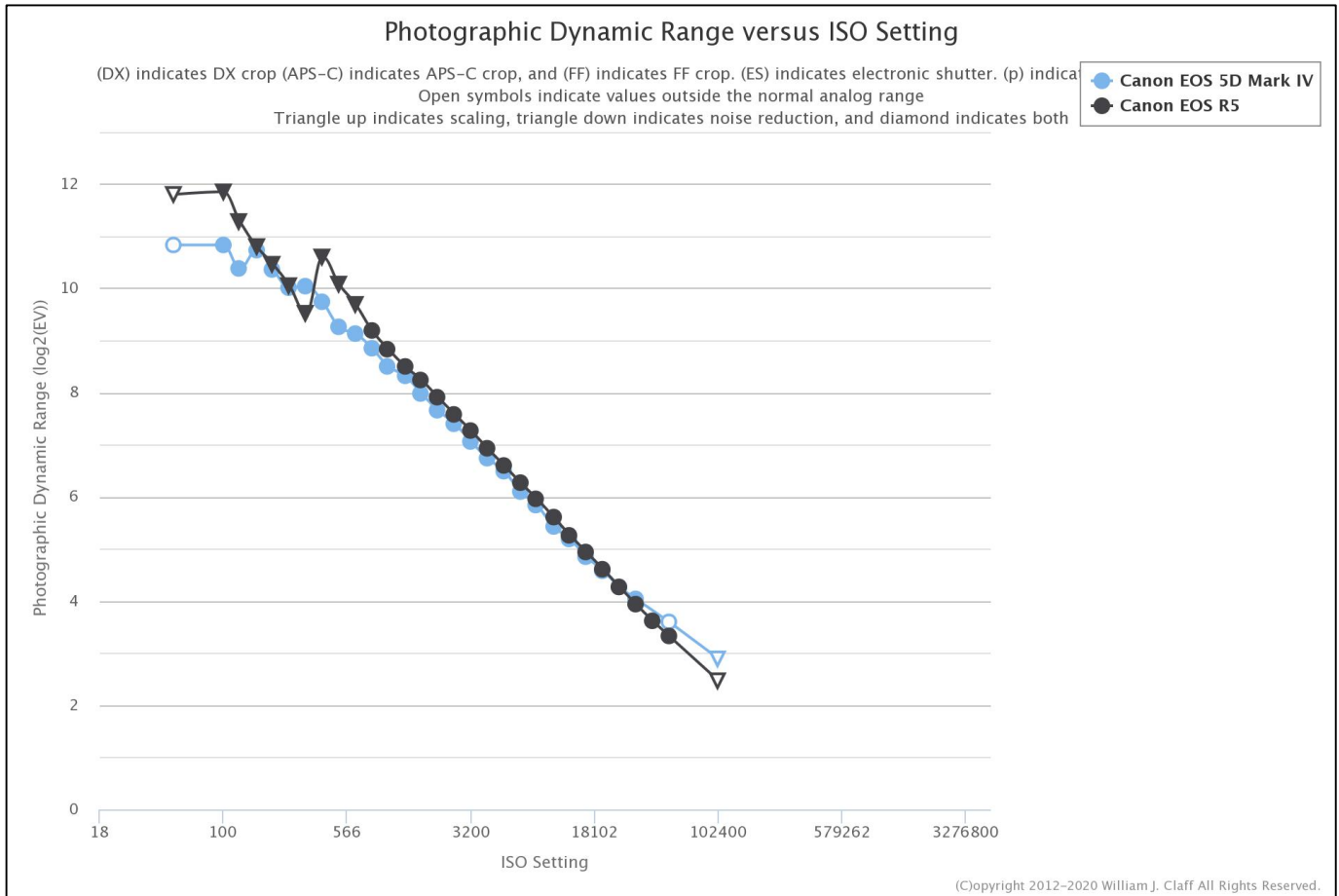
So, has Canon finally caught up in sensor technology after losing the lead in 2008 and seemingly falling farther and farther behind with each generation of new cameras? In short, they have caught up most of the way but still lag a tiny little bit. Let me explain further...

The bane of Canon sensors has been dynamic range; basically the number of times the amount of light can be doubled between the darkest discernible details in a photograph and when everything is recorded as pure white. Human vision is in the neighborhood of 20 stops. By comparison, in the transparency film days, we had a dynamic range (defined as exposure latitude on film) of between 4 and 6 stops. Print film could more or less double that. In other words, if shooting slide film, even if you nailed the exposure dead perfect the difference between black and white on a popular wildlife film like Provia II was about 5 stops and it was only a hair over 4 stops on a saturated landscape film like Velvia. When digital cameras first came to market to the masses around 2001, cameras like the consumer oriented EOS D30 had a dynamic range not too different from slide film and at best, high end professional cameras like the EOS 1D could eek out 6 stops. As sensors developed, these numbers started climbing to today's levels which are around 13 stops in the very best cameras.

We have to take a quick sidetrack at this point since you may be saying, but my camera specs say 15 stops, why is he saying the very best cameras are only 13 stops? In short and simplified language, there is a big difference between how the manufacturers specify dynamic range for the marketing spec sheet and the actual usable dynamic range for the photographer. Camera manufacturers use the point at which the signal to noise ratio (S/N) just begins to exceed 1.0 as the low end of their measurement but at a signal to noise ratio of 1, the signal (the shadow detail you are trying to capture in the image) and the sensor noise are equivalent – this means you can not differentiate between the signal and the noise. A usable S/N for actual picture taking and recording visible shadow detail is defined as the point where the S/N reaches 20:1. On average, the difference between a S/N ratio of 1:1 and one that is 20:1 takes

about 2 stops off of the manufacturer’s dynamic range to give us a “usable photographic dynamic range”. The site photonstophotos.net tests virtually every camera on the market for photographic dynamic range.

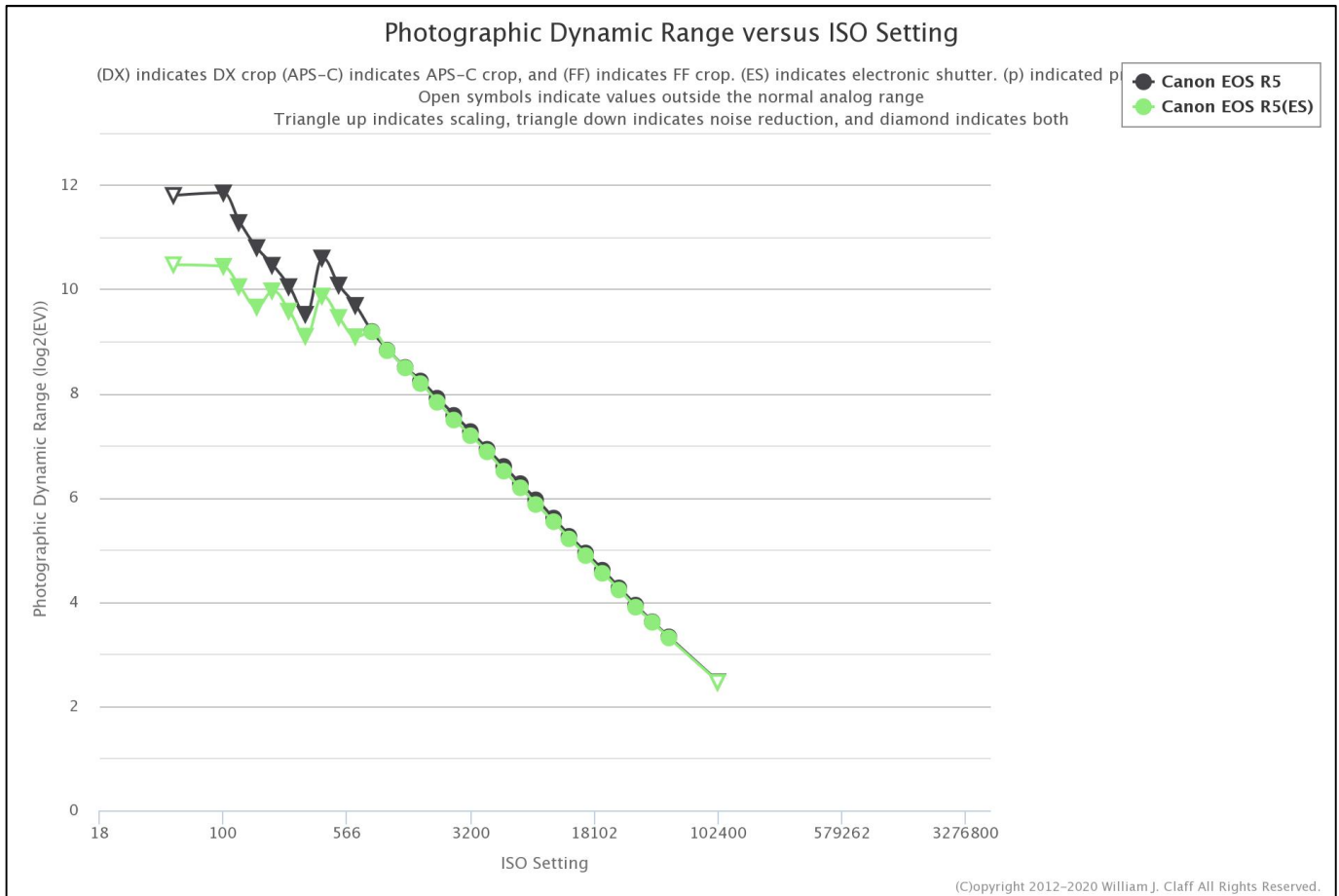
With that out of the way, back to the EOS R5! In the first graph below, we are going to compare the camera that the R5 more or less replaces in the Canon line-up, the EOS 5D Mk IV:



As you can see, at the base ISO level of 100, which is where landscape photographers will generally shoot, there is a full stop improvement in dynamic range over the EOS 5D Mk IV. That means the EOS R5 camera can handle a doubling of light over the 5D Mk IV despite having 50% more pixels (45mp vs. 30mp). This means that if you practice Expose To The Right (ETTR) exposure methods, you are gaining a full stop of shadow detail with the new camera at ISO 100 while not blowing out the highlights. If you look at the graph more closely, that advantage completely disappears by ISO 160. Another thing the graph tells us is that Canon has adopted a dual gain stage in their sensor pipeline because there is a big jump in dynamic range when you change the ISO to 400 and then the camera again has a substantial advantage over the 5D Mk IV. That is great for wildlife shooters because the advantage continues all the way through ISO 800 and there is still a slight advantage at ISO 1000. Once you go higher than that, the cameras are virtually identical. One final observation in comparing these two cameras is that on the R5, there is essentially no point in shooting this camera at ISO 200, 250, or 320 as the image quality is actually better at ISO 400 as measured by dynamic range, which translates directly to image noise.

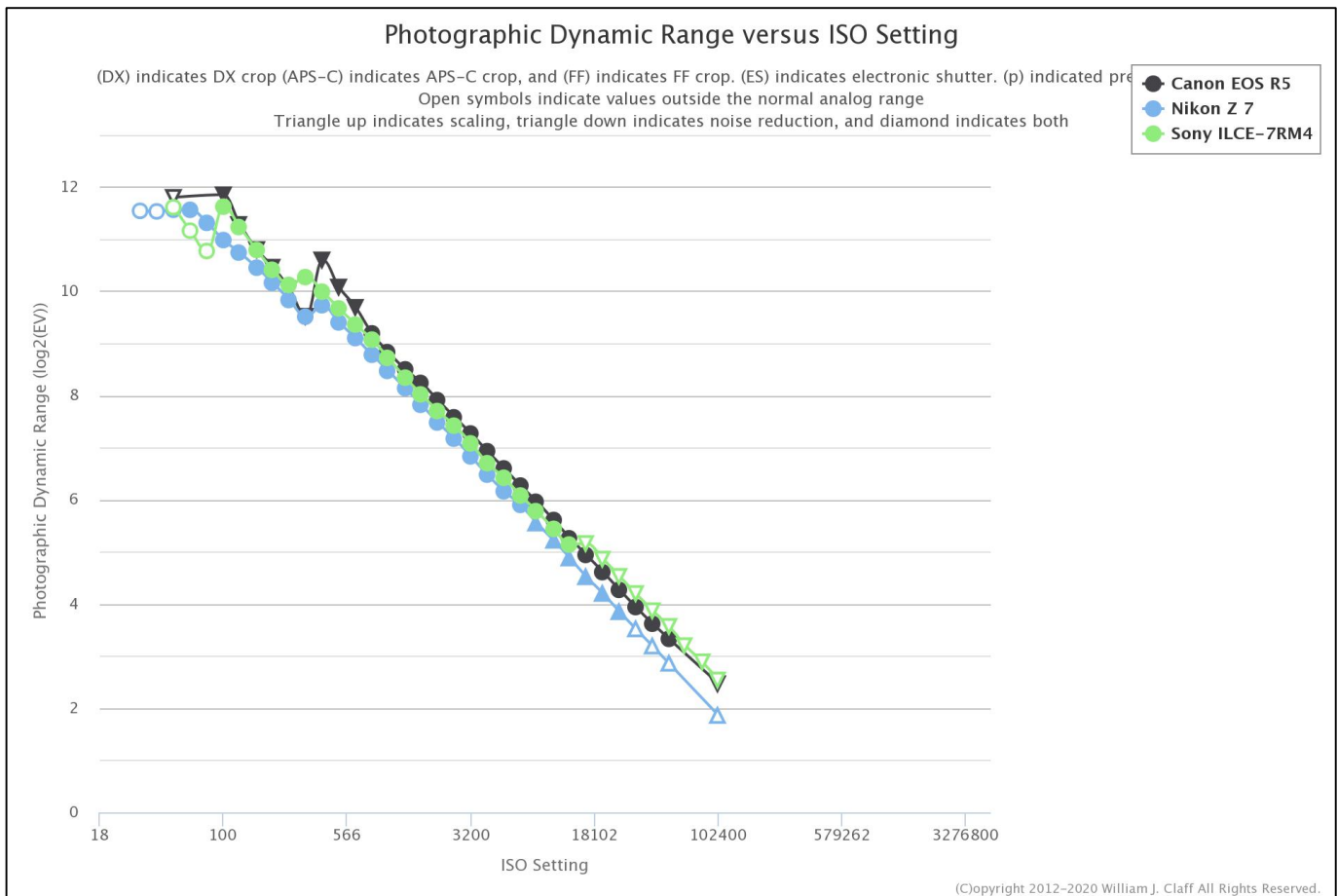
One thing that I have not read in any of the reviews but something that the photographic dynamic range graphs illustrate is that the EOS R5 is severely compromised in photographic dynamic range when

shooting with a full electronic shutter at low ISO, something that landscape photographers like to do on all but the windiest days to eliminate shutter shock on the exposures. Below is a comparison of the R5 in normal shutter and Electronic Front curtain shutter compared to full electronic shutter:



This comparison illustrates that the full electronic shutter mode drops the dynamic range by about 1.5 stops and actually drops it below the EOS 5D Mk IV. Exactly why is unclear but often this is due to the manufacturer dropping the number of bits per color. My guess is that the camera drops from 14 bits per color to 12 bits per color based on similar findings in some older cameras from other manufacturers. The competition, today, does not exhibit this drop in dynamic range when utilizing a full electronic shutter where the shutter blades are open for the entire exposure and do not move either before or after the shot. Based on this, I would shoot this camera in Electronic first curtain (EFC) mode so that you still get the benefit of less shutter movement impacting the exposure but not compromising dynamic range.

Let's compare the R5 to its primary competitors in the high megapixel mirrorless camera space. We will add the 45 megapixel Nikon Z7 and 61 megapixel Sony a7R IV to the graph and eliminate the old EOS 5D Mk IV DSLR:



In this comparison, at least just by looking at the graph, the EOS R 5 compares very well to the competitors in the full frame \$3K-\$4K mirrorless camera market. But all isn't exactly as it may appear. The first thing to note is that the Nikon Z7 has a base ISO of 64, not 100 like the other two cameras including the R5. So for a true dynamic range comparison, the Nikon curve would have to be moved 2/3 of a stop or two graph symbols to the right. When you do that there is no real difference between the Z7 and the R5 except for a small one at ISO 400. The Sony a7R4 has virtually identical dynamic range performance as the R5 except at ISO 400 where it is about 1/3 stop worse. I would consider that essentially equal performance.

Based on these graphs, you may now be wondering why I said that Canon still lags slightly? The main reason is that Sony achieves equivalent dynamic range performance on a 61 megapixel sensor as Canon does on a 45 megapixel sensor. Furthermore, the EOS R5 sensor does not outperform the 4 year old sensor in the 42 megapixel Sony a7R III – they are almost indistinguishable. So while Canon has caught up on dynamic range for what is available on the market, Sony does it at a higher pixel density and has been doing it since long before the R5 came to market – and they do not compromise dynamic range when shot with a full electronic shutter. Despite this small lag, Canon has made about a three generation leap in the performance of the sensor and in the 40+ megapixel sensor camera market, the shadow detail and noise is no longer the worst of all cameras essentially tying the competition for both landscape and wildlife use.

Since I don't have a review unit, I can't comment on the EOS R5's usability but from what I have read and what I have seen, it is a highly feature packed camera that will be a superb tool for both the

landscape and wildlife photographer. Canon has even taken eye-detect autofocus to the next level beyond Sony with bird-eye recognition. Additionally, Canon seems to have mastered AF with adapted long Canon super telephoto lenses, or at least made it much better than Nikon, making it useful even for super long lens action photography. The serious error that Canon committed with the R5 is that they almost exclusively marketed half-baked new video features while completely ignoring the fact that this is one of the very finest full-frame still image cameras ever made and certainly the best image quality camera of any kind that Canon has ever made. Overall, I have seen nothing that would prevent me from highly recommending this camera for the Nature Photographer. It is by far the most exciting Canon camera in over a decade.

Mirrorless Medium Format

For much of the digital era, or the last 20 years or so, Medium format digital cameras have been priced in the stratosphere; out of reach for all but the most affluent professionals and hobbyists. Companies like Hasselblad, Phase One, and Leica have been offering digital medium format cameras priced in the \$20,000 to \$50,000 range before adding several \$5000 to \$10,000 lenses for many years. Pentax initially offered a price breakthrough with their 645 style cameras based on a more affordable 44x33mm cropped medium format sensor rather than the 54x40mm (near 645 film size) sensors that Hasselblad and Phase One employed and the oddball sensor size that Leica uses but they never really fully fleshed out the system and allowed it to atrophy under Ricoh ownership of the Pentax brand. All of these cameras are based on the SLR concept with very large and vibration prone mirrors. They are all very heavy cameras which limits their usefulness for the adventure and hiking nature photographer. A few years ago, we started to see the first mirrorless medium format cameras based on the excellent Sony 44x33 cropped medium format sensor. These cameras brought the price well below \$10,000 while adding many of the features that smaller sensor cameras have enjoyed for a long time but have been missing from the ultra expensive medium format cameras - things like multiple point autofocus systems, blinking highlights and shadows prior to the exposure, histograms prior to the exposure, continuous autofocus, video and much more. Let's take a look at what's available today:

Fujifilm is by far the sales leader in the medium format space with their GFX line of cameras. There are two 50 megapixel models, the GFX-50S and GFX-50R and also a 100 megapixel model, the GFX-100. The GFX-50S and GFX-100 are traditional top-center viewfinder type cameras and the GFX-50R is a somewhat stripped down, budget oriented rangefinder style camera. The 50R and 50S share many of the same features and provide the same image quality but the 50S has a more traditional control layout, akin to SLR's of the film era and also Fuji's XT cameras. The GFX-100 has a completely different, button and menu based user interface. All of the cameras have the modern features of a mirrorless camera from automatic focus stacking, to virtually every aspect of the photo being available in the large EVF prior to the shot. The GFX-100, especially, has one of the largest and highest resolution EVFs of any camera – it is quite immersive and beautiful when you suppress all of the in-viewfinder information which can be done at the touch of a button. Alternately, on all of the cameras, you can even get half frame RGB histograms in the viewfinder prior to the shot. These cameras are truly designed for the photographer that likes to control every aspect of



the shot with a maximum amount of information. On the lens front, Fuji has the most complete line of medium format lenses among the mirrorless manufacturers and with adapters, any lens made for a system with a flange distance of more than about 27mm can be adapted. This includes all Nikon and Canon full frame lenses – many with minimal to no vignetting. For lenses that do vignette, Venus Optics make an optical adapter that allow those lenses to cover the whole 44x33 frame with a 1.4x teleconverter factor and one stop loss of light – it is essentially a wide-field 1.4x converter. Native lenses go from 23mm (18mm full frame equivalent) to 350mm (250mm lens + 1.4x - 280mm full frame equivalent). The system also includes three zooms covering all focal lengths from 32mm (25mm full frame equivalent) to 200mm (160mm full frame equivalent). The long zoom also takes Fuji's 1.4x converter with almost no image quality loss extending the zoom range to 280mm (230mm full frame equivalent). About the only thing missing are a super wide zoom and tilt-shift lenses. Of all of the medium format systems, a GFX-50R based system is the least expensive entry into the medium format world but sacrifices nothing in image quality and in fact is superior in many ways to all other medium format systems including the hyper expensive ones due to the fact that virtually every still photo capability that a Fuji XT-4 has but with dramatically higher resolution and image quality.

Hasselblad made a big splash about three years ago with their X1D mirrorless camera based on the same Sony 50 megapixel 44x33 sensor as the Fuji GFX-50 models use. This camera is a beautiful camera forged from a single block of aluminum and utilizes an almost smartphone style LCD touchscreen interface that is very intuitive and easy to use. If Apple were to build a medium format camera, this is how I imagine it would look and work. Unfortunately this camera was very buggy to begin with and suffered from extremely long start-up times



limiting its usefulness in some scenarios. Over time these were improved but ultimately, all of the promises of the X1D as well as the bugs weren't fully addressed until the introduction of the X1D II which is a fantastic camera. Hasselblad chose to use a lens based leaf shutter system and did not include a focal plane shutter making it more difficult to adapt lenses without a shutter built in and limiting the camera to its own line of very expensive lenses as well as larger format Hasselblad leaf shutter lenses via an adapter. The adapted lens situation was improved with the introduction of a fully electronic shutter mode but if anything in the frame is moving significantly, rolling shutter and distortions can be an issue. Lenses have been slow in coming out but at this point Hasselblad does cover focal lengths from 21mm (17mm full frame equivalent) to 135mm (105mm full frame equivalent) and there is a 1.7x teleconverter available. There is also a standard zoom that goes from 35mm to 75mm (28 to 60mm full frame equivalent). The X1D II, uses the same Sony 50 megapixel sensor and is really an outstanding camera at a fair price but the lenses are very expensive and limited in availability and range. There is currently no wide zoom or long zoom nor are there native tilt-shift lenses.

Recently Hasselblad has also introduced what they call the 907X 50C which is a throwback to the Hasselblad V system of medium (square) format film cameras that are currently making a bit of a comeback among film enthusiasts. This is a modular camera that you mount a sensor unit to the back of a flat camera board and a lens to the front. It is basically a flat plate with a lens mount on the front and a digital sensor mount on the rear along with a shutter button. It accepts the same X-series of lenses as the X1D and it uses the same 50 megapixel Sony sensor making it natively a 4:3 ratio camera not the original V series 1:1 square. Of course the camera can be shot in a square format resulting in a 38 megapixel 1:1 image. Presumably, if Hasselblad wanted to, they could offer a different sensor unit with a different resolution or aspect ratio such as the Sony 100 megapixel 44x33 sensor. One could simply snap on this new sensor unit. It is also possible to snap on a V-series medium format film back. For those wanting to work methodically with a V-series feel but without wanting to deal with film, this is a very attractive option and at just over \$6000 for camera and sensor unit, it is actually quite affordable from a Hasselblad frame of reference. Using this camera is entirely done via touchscreen from the rear of the sensor unit. There is a grip available that puts both autofocus point control and exposure controls as well as a shutter in your right hand.



Phase One does have a mirrorless option that is out of the realm of possibilities for 99.99% of consumers due to cost. They offer their modernized XT technical camera system which mates their 100 and 150 megapixel 645 sized digital backs with incredible but insanely expensive Rodenstock lenses that have been specifically modified and calibrated individually to the body and sensor unit. A full system with 3 or 4 fixed focal length lenses ranging from 21mm (15mm full frame equivalent) to 90mm (60mm full frame equivalent), the 150 megapixel back will run you in the \$60 to \$75K range depending on which lenses you get. It is a beautifully designed and highly user friendly camera by technical camera standards but again it is in the stratospheric realm for cost.



The Story Behind The Photo



I have been a licensed pilot for nearly 30 years and have held a commercial multi-engine license for 26 years. While I am no longer actively flying, I still stay up to date on aviation and still read and study accident reports several times a week. One thing that is essentially a law in aviation accidents is that the cause is never a single thing. It is always a chain of events, a chain of failures, or a chain missed signs that led to disaster. Capturing this quarter's "The Story Behind the Photo" is a story of a chain of events that could have ended up with my demise.

After 5 months of essential lock-down due to the coronavirus pandemic, I decided to go on a totally self isolated roadtrip for photography in southern Utah. Before I left I decided on several locations that I wanted to visit and photograph. One area was Grand Staircase Escalante and specifically the very colorful waterfall above. I did all of my usual pre-planning but I made several mistakes.

I had planned on arriving later in the day so that I would have this area to myself since people often hike to this waterfall to take a dip in the pool beneath it. My guidebook that has not let me down previously said that it was a 2.2 mile roundtrip hike to get to it. With the sun setting at 8:30PM, my plan was to get there around 7:45PM after the sun was no longer striking the inside of the canyon since I did not want the sun messing up my shots. Waterfall photography is usually best on overcast days or early morning/late evening after the sun no longer shines directly on the falls. With just a 1.1 mile hike to get to the falls, if I left at 7:20PM I would arrive at the falls no later than 7:45 leaving me nearly an hour to photograph the falls and making it back to my vehicle when there was still some light although about a half hour after sunset around 9:30PM. I had difficulty finding parking within about a mile of the trailhead but there was space near a car parked at a campsite. Since I did not have a camping permit I was essentially not parked legally although the people at the campsite had no problem with me parking there;

but my car was not registered with the Park Service for the campground. This caused me to rush more than normal. I grabbed my backpack and hiking tripod and set-off. After about 20 minutes I passed someone coming the other way (all socially distanced – people were really good throughout my entire trip about giving lots of passing room on trails). I asked “am I getting close to the falls?” The answer came as a shock to me “you have about an hour to go”. This caught me by surprise since 1.1 miles should at most take me 20 minutes and usually less than 15 minutes. I figured, since they didn’t look like they were in great shape, it couldn’t be more than 15 minutes but I accelerated really pushing myself and sweating heavily in the 94 degree heat carrying gear. Shortly after encountering the people I started to get a bit thirsty so I went to grab my water bottle from the side-pocket of the photo backpack. I came up empty. I had no water. I didn’t think it was going to be a big deal since I am a desert rat and can generally tolerate no water longer than most people. I carried on. The people I passed weren’t far off as it took me an additional 45 minutes of very hard and fast hiking all while carrying a 19 pound bag of gear plus tripod. I arrived at the waterfall at 8:20PM after more than a full hour of hiking and I was incredibly thirsty. My lips were starting to crack and my mouth was dryer than I have experienced in at least 20 years when I did the same thing on another shorter hike at well over 100 degrees. My concern was however more about how dark it would be coming back on the trail since it would take at least an hour to get back – a bit shorter than the outbound leg since I was losing several hundred feet of elevation rather than gaining elevation as I did on the hike to the falls. I photographed about 10 hurried shots and left 8 minutes after arriving figuring I would be hiking the last 15-20 minutes or so in complete darkness as moonrise wasn’t until 11:00PM. I started back and was making good time when suddenly I lost the trail as the light started to fade more quickly than anticipated due to being inside a forested canyon. It took about 5 minutes of back tracking to get back on the trail. Another 10 minutes I hit a wall of weeds and thought I was off trail. I do remember in my haste on the way to the fall going through a trail that was heavily weeded but the trail was still very visible. Coming the other way in twilight, it wasn’t so easy to see and a turn inside the overgrowth wasn’t visible at all. At this point it was starting to get relatively dark so I reached for my headlamp, it wasn’t there either. I was incredibly thirsty and chunks of skin were falling off my lips. Touching my tongue to the top of my mouth made it stick and it hurt like pulling a tongue off a frozen object. I was starting to worry at this point but I carried on as I was out in the open again and was still able to see with my now night adjusted eyes... until I hit a hard dead end. I backtracked and went down what appeared to be a different trail which was a strenuous descent and ascent in sand that did not look right. I hit another dead end. I backtracked again and ended up back in the same dead end. At this point I had my phone flashlight on and I was absolutely exhausted and thirsty as the effort to get back to some semblance of a trail with a backpack full of gear and severe dehydration setting in. I really started to worry at this point as the temperature was dropping fast; I had no water, and really did not know what to do to find the trail. I started having visions of dying overnight due to exposure as my shirt was drenched from the earlier effort and the overnight temperatures drops into the low 40’s but most of all I was worried about the lack of water. I considered trying to find my way down to the creek but this would be difficult in the dark and take my chances on some creek water and then after moonrise at 11:00PM, try again but I was worried about the effect of the cold especially given that my clothes were wet from sweat and getting cold. I even had thoughts of being a meal for a Mountain Lion which are common in the area. After three different attempts I decided to backtrack farther than previously and finally saw where I had gone astray. At this point I had another 20 minutes or so back to my car. Even though I wasn’t clear minded at this point, the last part of the journey back to the car was uneventful even though I was now in extreme dehydration and it felt like the outer layer was falling off of my tongue. I arrived at the car at 10:00PM, fully 90 minutes after sunset on a moonless evening. Fortunately I did not get a park ranger ticket. I drank incredible amounts of water and after a few minutes started driving. I was super uncomfortable and stopped about an hour and a half later at a turn out and could barely get out of the car, my body and muscles had basically shut down and locked up. I managed to lie down in the bed in the back of the SUV. As soon as I relaxed I started getting severe muscle cramps throughout my body due to the loss of all of the electrolytes in my body. My skin had a thick salty coating all over from the dried sweat and all of the electrolytes that left my body. I took

two potassium and two magnesium pills with another bottle of water and wiped my skin down with a wet cloth. At this point I had consumed over a gallon of water in two hours and had no sign of needing to urinate. I was able to sleep for a couple of hours and then resumed driving back home towards Phoenix. I got really tired again at about 3:00AM and took another 2 hour sleep between Kanab and Page. A severe leg cramp woke me up and I boiled a cup of tea and had some cereal which I later threw up. Back on the road I made two stops, one for coffee and another for fuel and each time I had difficulty getting my body to function enough to get out of the car but I somehow managed. I got home about 14 hours since the end of the hike with the two sleep periods. As I write this two days after returning, I am still suffering muscle fatigue and soreness. It was a full 24 hour before I was able to urinate but digestive functions have now returned to normal.

When I started this story, which is not embellished in any way, I spoke of a chain of events that led to near disaster:

1. For some reason I did not verify my guidebook's 2.2 mile distance which is something I usually do. It turns out that the book has a typo and it should have said 2.2 hours roundtrip, not miles.
2. I left my Lifestraw at home – this should ALWAYS be in my backpack so that I can safely drink any water I run into in the event of not having enough water.
3. In my haste I did not put the water bottle in my backpack. I was clearly mentally distracted knowing that I was parking where I shouldn't be.
4. In my haste I did not transfer my headlamp from my Fuji medium format gear backpack to my Sony gear hiking backpack.
5. Once I knew that the hike was much longer than I expected as the sun was setting and that I didn't have water, I chose to push on rather than to turn back and try again when I would not be rushed despite knowing I would return in the dark.
6. I placed getting a photograph above my own personal safety.
7. In my haste I did not do enough looking behind me as I was hiking to the waterfall to insure that I could find my way back.
8. I waited way too long to resort to the flashlight on my iPhone – I truly believe that that there's a good chance that this little LED saved my life – by the way this location has no cell phone signal and GPS is spotty due to being in a canyon and often not having enough satellites for the phone to figure out exactly where you are.

Another contributing factor was that I was already a bit tired and dehydrated as I did several other short hikes earlier in the day in 95 to 104 degree temperatures in Capitol Reef National Park. Certainly, this experience, which seemed traumatic as it was occurring and had negative effects on my health for several days, has taught (or re-taught) me a number of lessons. As I was returning and I realized that I was in trouble, my mind went to all of the aviation accidents that I have studied and I saw many parallels to a chain of events, or a chain of ignoring signs, that can lead to disaster.

This isn't a particularly difficult trail. While it is an uphill grade outbound, for the most part it is generally flat and often sandy with a few climbs over rocky areas. However, returning in the dark, it is a completely different beast despite being a downward grade since there are numerous offshoots that people have made and the brain and visual system perceives things quite differently in the dark when badly dehydrated. The one positive that came out of this is that I did get a couple nice photos of these waterfalls in their very colorful surroundings but I could not work the area due to the self-induced time crunch. As I read back the account of the story above, the one thing that it does not convey is the true sense of fear that set in, especially the one time when I was truly lost and seemingly in an infinite loop on an unmarked and unmapped trail. Fear is not something I am very accustomed to feeling...



Pacific Brown Pelican (EOS 1Ds, 600mm)

Social Media Reminder

Just a small reminder to please subscribe to my Instagram page if you would like to see some of my best landscape photography: <https://www.instagram.com/ejpeiker/> and to my Facebook page to see a mixture of wildlife and landscape photography: <https://www.facebook.com/EJPeikerNaturePhotographer>

Continuous Garage Sale

All items that are currently available for sale are listed on my website. Here's the direct link to all of the gear I am currently selling – it is kept up to date: https://ejphoto.com/gear_for_sale_page.htm



Lake Wakatipu – New Zealand (D3x, 24-70mm)

The Best Lenses for Your Nikon DSLR, Canon DSLR, and Sony (FE) Cameras

The table of best lenses for your camera is a living document that gets updated every quarter. Changes from previous tables can be seen in bold. Next quarter, I plan on changing over to the Canon EOS-R and Nikon Z mount.

Lens Category	Canon EF Mount	Nikon F Mount	Sony (F)E Mount
Full-frame Fisheye	Canon 8-15mm f/4L Sigma 15mm f/2.8	Nikon 8-15mm f/3.5E Sigma 15mm f/2.8	Sony 28mm f/2 + 16mm Fisheye Conversion Lens
Hyper Wide Prime	Sigma 14mm f/1.8 Art Irix 11mm f/4	Sigma 14mm f/1.8 Art Irix 11mm f/4	Sigma 14mm f/1.8 Art
Ultra Wide Prime	Zeiss Milvus 15mm f/2.8 Canon TS-E 17mm f/4	Zeiss Milvus 15mm f/2.8 Nikon 19mm f/4 PC	Zeiss Batis 18mm f/2.8 Voigtländer 15mm f/4.5
Extra Wide Prime	Zeiss Milvus 21mm f/2.8 Sigma 20mm f/1.4 Art	Zeiss Milvus 21mm f/2.8 Sigma 20mm f/1.4 Art	Sony 20mm f/1.8 G Zeiss Loxia 21mm f/2.8
Standard Wide Prime	Zeiss Otus 28mm f/1.4 Zeiss Milvus 25mm f/1.4 Sigma 24mm f/1.4 Art	Zeiss Otus 28mm f/1.4 Zeiss Milvus 25mm f/1.4 Sigma 24mm f/1.4 Art	Sony 24mm f/1.4 GM Sigma 24mm f/1.4 Art
Moderate Wide Prime	Sigma 35mm f/1.4 Canon 35mm f/1.4L II	Sigma 35mm f/1.4 Zeiss Milvus 35mm f/2	Sigma 35mm f/1.2 Art Sony-Zeiss 35mm f/1.4
Standard Prime	Zeiss 55mm f/1.4 Otus Sigma 50mm f/1.4 DG Art	Zeiss 55mm f/1.4 Otus Sigma 50mm f/1.4 DG Art	Sony-Zeiss 55mm f/1.8 Zeiss Loxia 2/50
Portrait Prime (short telephoto)	Zeiss 85mm f/1.4 Otus Canon 85mm f/1.2L II	Zeiss 85mm f/1.4 Otus Sigma 105mm f/1.4 Art	Sigma 85mm f/1.4 DG DN Sigma 105mm f/1.4 Art

	Sigma 105mm f/1.4 Art	Nikon 105mm f/1.4E	Sony 85mm f/1.4 GM
Medium Telephoto Prime	Canon 135mm f/2L Sigma 135mm f/1.8 Art	Sigma 135mm f/1.8 Art	Sigma 135mm f/1.8 Art Sony 135mm f/1.8 GM Zeiss Batis 135mm f/2.8
200mm Prime	Canon 200mm f/2L Canon 200mm f/2.8L II	Nikon 200mm f/2G Nikon Micro Nikkor 200mm f/4ED	N/A
300mm Prime	Canon 300mm f/2.8L IS II	Nikon 300mm f/2.8G VR Nikon 300mm f/4 PF	N/A
400mm Prime	Canon 400mm f/2.8L IS II Canon 400mm f/4 DO II	Nikon 400mm f/2.8E VR	Sony 400mm f/2.8 GM
500mm Prime	Canon 500mm f/4L IS II Sigma 500mm f/4 DG OS HSM	Nikon 500mm f/4E VR Sigma 500mm f/4 DG OS HSM Nikon 500mm f/5.6 PF	N/A
600mm Prime	Canon 600mm f/4L IS III	Nikon 600mm f/4E VR	Sony 600mm f/4 GM
800mm Prime	Canon 800mm f/5.6L IS Sigma 800mm f/5.6APO DG	Nikon 800mm f/5.6E VR Sigma 800mm f/5.6APO DG	N/A
Wide Angle Zoom	Sigma 14-24 f/2.8 Art Canon 11-24mm f/4L Canon 16-35mm f/2.8L III	Sigma 14-24mm f/2.8 Art Nikon 14-24mm f/2.8G Sigma 12-24mm f/4 Art	Sony 16-35mm f/2.8 GM Sony 12-24mm f/2.8 GM Sigma 14-24 f/2.8 Art Tamron 17-28 f/2.8 Di
Standard Zoom	Canon 24-70mm f/2.8L II Tamron 24-70mm f/2.8 G2 Di VC	Nikon 24-70mm f/2.8E ED VR Tamron 24-70mm f/2.8 G2 Di VC	Sigma 24-70 f/2.8 Art Sony 24-70 f/2.8 GM Tamron 25-75mm f/2.8
Telephoto Zoom	Canon 70-200mm f/2.8L IS II Tamron 70-200mm f/2.8 G2	Nikon 70-200mm f/2.8E FL VR Tamron 70-200mm f/2.8 G2	Tamron 70-180mm f/2.8 Sony 70-200 f/2.8 GM
Super Telephoto Zoom	Canon 200-400mm f/4L 1.4x Canon 100-400 f/4.5-5.6 II	Nikon 180-400 f/4E 1.4x Sigma 150-600 f/5-6.3 Sport	Sony 100-400 f/4.5-5.6 GM Sony 200-600 f/5.6-6.3 G
Macro	Sigma 150mm f/2.8 Macro OS Irix 150mm f/2.8 Macro	Sigma 150mm f/2.8 Macro OS Irix 150mm f/2.8 Macro	Sony 90mm f/2.8 Macro Voigtlander 110mm f/2.5 Tokina Firin 100mm f/2.8



Comet NEOWISE – Four Peaks, Arizona (GFX-50S, 250mm)

Workshops

All of my group and one-on-one workshops are currently on hold until such a time that safety from COVID-19 can be assured.

Private instruction in camera operation, landscape and wildlife photography is also available as well as image processing training. Photo workstation consulting services are available. These services are currently only available via telephone or video conference. Contact me at ejpeiker@cox.net for more information.



Southern Mississippi (a7R3, 24-70mm)

Facebook and Instagram Pages

I routinely post new photos, articles, etc on my Professional Facebook Page and my Instagram Business Page as well as links to my latest articles. If interested, please click below and then click on the Like button.

<http://www.facebook.com/pages/EJ-Peiker-Nature-Photographer/>

<https://www.instagram.com/ejpeiker/>



Little Missouri River – Arkansas (D810, 24-70mm)

Newsletter Info

This is the 19th year of my quarterly Newsletter. I try to cover the wide array of digital imaging and products from mirrorless to medium format and everything in between. Throughout the years, the information contained herein has always been free and will continue to be free despite the many hours it takes to put it together and significant equipment and travel expenses. Most of the products that I have tested and reviewed, I have purchased myself. A small minority have been made available to me for review and evaluation by loyal readers and a few by the manufacturers themselves. While the newsletter is free either via eMail subscription or via accessing it on my website at

<http://www.ejphoto.com/newsletter.htm>, if you find the information useful to you and you do wish to donate for my continuing efforts, you may do so via PayPal and sending the funds to ejpeiker@cox.net.

Disclaimers

E.J. Peiker conducts consulting services and product design services for a number of photographic product companies. Those that know me know that I would not endorse a product, even for compensation, if I did not feel it were a superior product.

E.J. Peiker is a co-founder of www.Naturescapes.net and leads photographic workshops under the **NatureScapes** Certified Workshops banner.

E.J. Peiker is a member of **Nikon** Professional Services and receives some services at a substantial discount or free of charge from Nikon USA. www.nikonpro.com

E.J. Peiker is a **Sony** Digital Imaging Pro and receives some services at a reduced cost or free of charge from Sony USA. <https://alphauniverse.com/prosupport/>

E.J. Peiker promotes **LensCoat** products and receives some of their products at no cost. www.lenscoat.com

E.J. Peiker is a **Singh-Ray Filters** featured photographer and receives non-monetary compensation from Singh-Ray. Visit Singh-Ray at <http://singh-ray.com/>

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Playa de Geirua, Spain (a7R II, 24-70mm)


E.J. PEIKER - NATURE & TRAVEL PHOTOGRAPHY