NEWSLETTER

MICHAEL CLARK
PHOTOGRAPHY

FALL 2018

contents

copyright notice:

Cover Image: A driver preparing for a dirt track race at the Uranium Capital Speedway in Milan, New Mexico on Saturday, October 6th, 2018. Opposite Page: Twisted Pinon Pine trees atop Dragon Point on the south rim of the Black Canyon of the Gunnison near Montrose, Colorado.

The Embargo

The reality of commercial photography and marketing

As I went to put this Newsletter together I realized my biggest assignments from this summer and fall were still under embargo from the clients. Sometimes these embargoes, which basically mean I am still waiting for the client to use the images so I can talk about that assignment, last for several months. In one case, an assignment I shot in February is still waiting to be put out into the world by the client. This is just part of the game. Of course, I am very excited to see all of these images get used by the respective clients. Stay tuned on that front, hopefully by the next Newsletter I can write up an article on some of those exciting assignments.

Regardless of the embargoes, here in this Newsletter I am very excited to have a photo gallery of images (starting on page 32) from a recent assignment with Merrell, who hired fifty photographers in all fifty states of the USA to go out and capture images of hikers and climbers on the trails. The impact of that campaign is pretty stunning. Merrell set out to celebrate diversity and inclusion—and I think they created something bigger than even they expected with images of every ethnicity, creed, and gender. The timing of the launch was also perfect, coming out the day before the mid-term elections in the United States to remind us all that we have more in common than what divides us. While putting this photo gallery together here in the Newsletter, I feel it is one of the strongest layouts I have included in the Newsletter in a long time.

Because of the embargoes, this issue might feel a little heavy on the gear-talk. I posted an extensive review of the Nikon Z7 on my blog, but I realize that not everyone reads or checks my blog so I have included a slightly modified version of that review here in the Newsletter as well. With Nikon, Canon and others releasing their first full-frame mirrorless cameras this fall it has been a very interesting time for photographers contemplating these new tools. I know for myself that I have spent way too much time thinking about gear lately. Hopefully my thoughts on the Z7 will help you figure out if it is the right tool for your work.

It has been a very busy fall (see the client list below) and I am very excited about winter and all that it brings—especially downhill skiing and ice climbing. For those in the United States, Happy Thanksgiving!

Opposite Page: Deollo Johnson in the studio at the Santa Fe Photographic Workshops for Michael Clark's Cutting-Edge Lighting workshop.

Recent Clients: Apple, *National Geographic*, Patagonia, Merrell, MAC Group, Colorado Tourism, Karsh Hagan, New Mexico Tourism, and *Outdoor Photographer*.

Annual Fine Art Print Sale

25% off of any Fine Art Print through December 31st, 2018

To get the ball rolling for the fall holiday season, I am happy to announce a 25% off sale on all of my fine art prints until December 31st, 2018. How this works is very simple, just take 25% off my standard fine art print pricing, which can be found here, and contact me to order the print.

All of my images are available as Fine Art Prints. You can see which of my images are in the Limited Edition category on my website. Any images that are not shown on the Limited Edition page are considered Open Edition prints. Please note that these prices do not include shipping. If you have any questions about print sizes or available

images please don't hesitate to contact me. I will work with you to make sure the final print is the best it can possibly be and will look great mounted on your wall.

These archival prints are painstakingly created by yours truly on some of the finest papers available. I do not outsource printing to a third party printer because I want to have tight control over the quality of the final print, and I have not found a third party printer that can achieve the same level of quality that I can produce here in my office. The prints are made on Epson printers using a variety of papers including both fine art matte papers and baryta photographic papers. The printer and paper combination is chosen specifically for each image so that image will be rendered with the highest possible resolution and the widest color gamut. Our main papers are Ilford Gold Fibre Silk, Ilford Gold Cotton Textured and Ilford Fine Art Smooth papers. Above is a sample framed print that I have made in the last few months to give you an idea of just how stunning these turn out when framed up.

Please contact me with any questions or if you would like to look at a wider range of images than are featured on my website.

Photography Workshops

An overview of workshops and online classes with Michael Clark

Each year I teach a few workshops on a variety of topics including adventure sports photography, big-wave surfing photography, and artificial lighting. Below is a listing of the workshops I will be teaching in 2019. For more information on these workshops, and to find out how to register, go to the Workshops page on my blog.

Surfing Photography

North Shore, Oahu, Hawaii

February 21 -24, 2019

The Surfing Photography Workshop is back! Join legendary surfing photographer Brian Bielmann and I for an exciting one-of-a-kind workshop that delves into the world of big-wave surfing photography. Brian is a top surfing photographer who has been shooting the sport for more than 40 years. I will bring my adventure photography skills, including shooting surfing for the last decade, as well as in-depth experience with digital workflow to round out the workshop.

This 4-day workshop combines daily photo shoots at world-class surfing locations on the north shore of Oahu and classroom instruction. We will spend half of the workshop shooting in the early mornings and in the late afternoon and evenings when the waves and the light are at their best. The other half of the workshop will be spent in the classroom focusing on image critiques, and discussing gear, strategies and the business of photography. We will also discuss basic and advanced strategies for shooting surfing and digital workflow in detail.

In late February, when the workshop is scheduled, large waves hit the north shore frequently. Though we cannot predict or guarantee the wave sizes or surfing conditions, the north shore of Oahu usually serves up sizable waves on a regular basis. We will tailor each day so that we can get the best possible images. We will host the workshop at the Turtle Bay Resort.

Since surfing photography relies on large lenses, each participant will need to bring a telephoto lens that is at least 400mm. A 500mm or 600mm lens is preferred. If you don't own one of these lenses, please rent or borrow one. Please contact Brian or me with any questions about lens selection and rental options. We also have a special deal with Hawaii Photo Rental Oahu, who have 500mm and 600mm lenses from Canon, Nikon and Sony.

The cost of this workshop is $2,295 per person. A deposit of $700 is required to secure your spot in the workshop. You can find more information about the workshop on my blog, including information on what we will be doing each day and the equipment needed for the workshop.

An image created during the Surfing Photography Workshop on the North Shore of Oahu. After a little hiatus, Brian Bielmann and I are teaching this workshop again in February 2019. Check out the workshop description on the previous page for more information on this incredibly fun and exciting workshop.

This workshop is very unique and it is one of the most exciting workshops anywhere in the world. As proof of that statement, we have already had several people sign up and take the workshop more than once. If you have ever wanted to photograph surfing, I encourage you to come join us in Hawaii. If you have any questions or would like to register for this workshop please send me an email. For more information check out my blog post announcing this workshop.

Adventure Sports Photography

Summit Workshops - Jackson, Wyoming

September 14 -19, 2019

Instructors: Lucas Gilman, Sadie Quarrier, Dave Black, Jen Edney, Ryan Taylor, Bo Bridges, Scott Willson, Ron Taniwaki, and Michael Clark

Action and Adventure Junkies Rejoice! Set out on a

photography journey in the Grand Tetons with our faculty of adventure photographers and editors from National Geographic, Red Bull, The North Face, and more. Work with the expert photographers and learn the shooting and scouting techniques that they use to land their images in top publications, meet the editors behind some of the world's most daring photography expeditions and learn how they hire photographers, and even spend a night camping with the faculty as you network with them throughout the workshop.

In this workshop, you'll be exposed to every aspect of adventure photography, from adventure and outdoor sports photography to product and outdoor commercial photography. The Adventure Workshop is for any and all photographers, and although some hiking is required, there is no recommended minimum level of fitness.
Cost: $1,995.00

Go to the Summit Workshops website for the specifics on what is covered and what isn't. Please note that this workshop is taught by nine outstanding photographers and photo editors and offers an incredible opportunity to learn from not just one but many experts.

Online Workshop Classes

Over the last few years I have taught a number of online classes for CreativeLIVE, which are available for download on their website. These classes are in-depth, online two-to-three day courses. Hence, there is a lot of information and they are a very cost effective way to learn about various photography skills. Below are a listing of my most recent classes.

The Professional Photographer's Digital Workflow
CreativeLIVE (www.creativelive.com)

This digital workflow class covers everything from image capture to the final print. This is not just a class on how to process your images, it is a detailed class for any and all photographers looking to take their photography to a whole new level, stay organized and make sure that they are getting the best possible image quality. This CreativeLIVE class won't cover everything contained in my digital workflow e-book, but it will cover a good portion of the key basics. We are going to take a deep dive into color management, sensor cleaning, image organization, file and folder naming, processing images in Lightroom and Photoshop, printing, backing up your images and much more. To watch or purchase this class visit www.creativelive.com.

Cost: $99 USD
Note that CreativeLIVE often runs sales so the class might be discounted below this price.

Advanced Lighting for Adventure Photography
CreativeLIVE (www.creativelive.com)

Last Summer I taught a two-day live class on advanced lighting techniques for CreativeLIVE and Red Bull Photography, which was broadcast live on July 17th and 18th, 2017. This advanced lighting class covers Hi-Sync (HS) lighting techniques for outdoor and adventure photography and also includes a section on capturing portraits of outdoor athletes. As part of this course, we photographed rock climbing, cyclocross, and trail running.

This class is available for download on www.creativelive.

com. While this isn't an in-person workshop, like the others listed here, it is a resource that is available online and can be downloaded and watched anytime.

Cost: $79 USD
Note that CreativeLIVE often runs sales so the class might be discounted below this price.

Workshop Testimonials

"Within the short time I've been studying and practicing photography, I have had teachers who are good educators, but not great photographers, and vice versa, but few who are both. Count yourself in these narrow ranks...I went through 4 years of college and several careers getting less candid advice and encouragement than I got in 4 days with you. For what it is worth, thank you for that." – Brandon McMahon, Adventure Photography Workshop

"Michael set an incredibly high bar for his workshop. He gave 110%, covered a broad range of topics and did an outstanding job." - Chris Council, Adventure Photography Workshop

"I just finished Michael Clark's Adventure Photography Workshop at the Santa Fe Workshops. I had a terrific time with the group of people. We came because of the Santa Fe Workshop's reputation of presenting an intense learning experience guided by fantastic instructors. We got both. Michael Clark really knows his stuff and has a lot of excess energy, which he focused on us, and he can also teach. He read our skills and weaknesses quickly and went to work to improve each of us technically. He sorted out our individual goals, even when we couldn't really articulate them. Then he gave us plenty of time to address those goals and ask question after question after question. The rough environments in which we photographed were great fun to explore. Couldn't be better." - Tania Evans

"Michael is the best instructor I have taken a workshop from." - Participant, Cutting-Edge Lighting Workshop

"Priceless chance to learn from the absolute best. Every photographer should take this class!" - Jill Sanders, The Professional Photographer's Digital Workflow available on CreativeLIVE

"Michael is a true professional and readily explains all of the nitty gritty issues of a photographer's digital workflow, including important things like Color Management, Lightroom workflows, Printing, and more. He is eager to answer your questions and has a thorough knowledge and passion that he loves to share. He can get way deep into the subject, which I found fascinating. You can tell Michael has great experience in teaching and also likes to learn from his students. He is very authentic, honest, and direct. I highly recommend this class, and look forward to another one of Michael's courses in the future!" - Kristen, The Professional Photographer's Digital Workflow on CreativeLIVE

"I really enjoyed the surfing [photography] workshop! It was great on every level. I really can't thank you enough and I hope to take another of your workshops in the near future." - Ben Reed, Surfing Photo Workshop

For more information on my upcoming workshops, or to read more testimonials, please visit the Workshops page on my blog. Hope to see you at a workshop here soon!

The Nikon Z7

A review of Nikon's brand-new, top-end full-frame mirrorless camera

Disclaimer: *I have been affiliated with Nikon in the past and for many years I was one of their "Masters" but currently I am not a Nikon Ambassador. Regardless, I wanted to be up front about my prior relationship with Nikon. The Nikon Z7 was loaned to me by B&H Photo and Video for a month long test period. This review originally appeared on my blog and has been cut down considerably. To read the full-length review visit my blog.*

Over the last three or four years, I have been watching the mirrorless market as it grows and matures. While teaching workshops, I have had the chance to play

While capturing images at the Uranium Capital Speedway in Milan, New Mexico I had only a few seconds to get this image. The live Histogram allowed me to get the exposure right with fast-paced action as in this situation the driver pulled away seconds later. In situations where you have to react quickly, and don't have time to take test shots, mirrorless cameras have a big advantage. Tech Specs: Nikon Z7, FTZ Adapter, AF-S Nikkor 85 f/1.4 G, 1/125th second at f/1.4, ISO6400.

with quite a few different mirrorless cameras brought by participants. Every time I have picked up a mirrorless camera in the past my reaction was no, no, no. They just weren't ready. They were no where near the performance of my Nikon DSLRs. Often it was the poor quality of the electronic viewfinder (EVF) that really turned me off. I admit to not really loving any EVF I have ever seen. Other times the autofocus was slow and clunky. In other cases the menus and ergonomics were a complete mess. Some of the cameras just seemed small and toy-like, with horrible ergonomics.

I have shot with Nikon cameras since I was 15 years old. I do confess to being biased. Nikon just knows how to make a kick-ass camera. They have hit it out of the park with every pro-caliber camera they have released since the D3 and D700 came out over a decade ago. The D800 series cameras have been my mainstay since 2012. As far

as image quality, there is no other full-frame mirrorless or DSLR camera on the market that beats the Nikon D850 as far as I have seen.

Enter the Nikon Z7. Let's just start this off with a reality check. The Z7 is not a mirrorless D850. It is a different camera, with different strengths and weaknesses, that just so happens to have a very similar sensor. We will get into how it compares to the D850, but I just want to make it clear here at the start that I don't see the Z7 replacing my D850 for a number of reasons. It is a great compliment to the D850 but it is not quite as versatile. More than anything, the Z7 might just be the best expedition camera I have ever used—and by that I mean a lightweight, high-resolution camera body with a very lightweight, sharp 24-70 f/4 S lens. Because I don't see the Z7 replacing my venerable D850, a big part of my evaluation here in this review is to see how it could fit in with my existing kit. Buckle up your seat belts, this is going to be a long review. There is a lot to cover.

ERGONOMICS

The Z7 has by far the best ergonomics of any mirrorless camera I have used, save for the Hasselblad X1D. It feels like a Nikon, which is a high compliment. The grip is big enough, just barely. The grip is still not as nice as the one on the D5 or D850, whose grips fit my hand much better, but for a compact camera it feels just about right. My pinky does hang off the bottom just a bit, but I also have large hands. [I can palm a basketball for those that need a comparison.] Just as with my D850, I can adjust almost any critical setting with one hand and without pulling my eye away from the viewfinder. If I am getting nit-picky, the smaller form factor does make it harder to adjust the exposure compensation because that button is on the far top right side of the grip. Those folks with smaller hands probably won't have that issue.

The camera is overall quite responsive. The touch screen on the back of the camera is gorgeous and reacts to input very quickly. Because of the smaller form factor, Nikon had to reduce the number of buttons on the camera body and move some of those settings into the menu system. Luckily, they created a new "***i***" button on the back of the camera which allows for very quick access to those functions that had their own button on corresponding DSLRs and it also adds access to a whole lot of other functions. The "***i***" button is also extremely customizable so you can set up the camera to access a whole host of different functions very quickly.

There is an approximately one and a half second start up time from when you turn the camera to the on position to when you actually see an image in the EVF or on the LCD. That is fairly annoying coming from an OVF camera like the D850 where it is instantaneous. I have definitely missed a few shots because of this. Even if you leave the camera on and don't use it for a while, then put it up to your eye and wake it up by pushing the shutter release there is still a lag before you see an image in the EVF. I realize this is an issue with many mirrorless cameras, not just the Nikon Z7. Hopefully this can be overcome in future iterations.

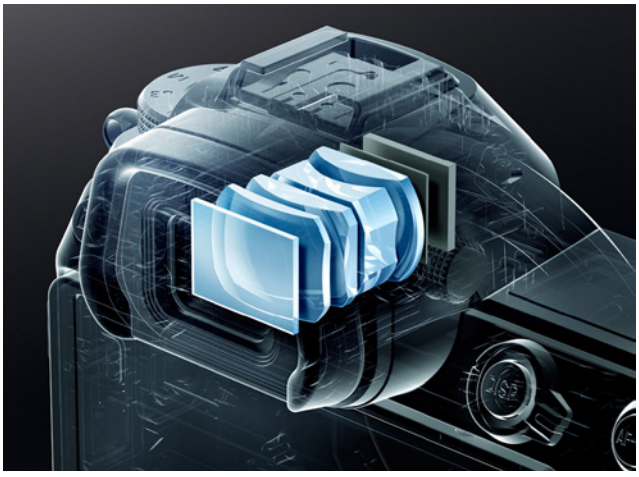
As shown on the following page, the layout of the buttons and the configuration of the Z7 is very similar to Nikon's DSLRs. For those coming from a Nikon DSLR, the Z7 will be very familiar—and easy to transition over to. For a working pro, this is a huge deal as we have so much time

with prior cameras—and so much familiarity with them—that having a similar layout means we can get to work right away and incorporate a new camera into our workflow without any impact on our creativity.

THE ELECTRONIC VIEWFINDER

My biggest issue with mirrorless cameras is usually the electronic viewfinder (EVF). I haven't really seen an EVF that I was impressed by, until now. The Z7 has the best EVF I have ever seen and I have seen EVFs from just about every manufacturer. I am not sure how Nikon did it but in use, the EVF looks very life-like. If there is a time lag in the EVF it is so short that it is hard to detect. The specs on this EVF are no different than Sonys, and many other manufacturers EVFs, so it appears that Nikon created this special EVF via the optics in front of it. Regardless of how they pulled it off, the EVF built into the Z7 is

something special and one of the main reasons for anyone to choose this camera over and above any other mirrorless offering. It is just that good. And you will have to look through the viewfinder yourself to see it.



The optics incorporated into the Nikon Z7 electronic viewfinder.

Of course, even though the EVF is spectacular, there are some situations where it falls short of an optical viewfinder (OVF). In contrasty lighting situations, where the dynamic range of the scene is beyond what the EVF and the camera can capture, blown out highlights are visible in the EVF. On one level this is good because it shows exactly which part of the scene is blown out. Underexposing the image can recover those highlights but also throw your subject into dark shadows, making it difficult to see what is happening in those parts of the image.

In less contrasty lighting situations the EVF is not really that different from an optical viewfinder, but it does offer a lot more information. Having a live histogram visible in the viewfinder is incredibly useful. Since you are seeing exactly what the image will look like before pressing the shutter release, it is easy enough to adjust the settings to dial in the histogram and the exposure so that you get exactly what you want. This is one of the biggest advantages of mirrorless cameras.

During my testing, there was a situation where I noticed a significant color difference between the blue sky represented in the EVF and the real blue sky. In that instance I tried adjusting the white balance and the color settings but no matter what I tried I could not get the EVF to show accurate color. It was so far off that I switched to my D850. Those of you who read this blog or my e-books probably already know that I am pretty anal about color and getting the color in my images dialed in so this color issue was a surprise. So far, I have not run into this issue again but it is something to remember. The EVF is not showing you reality. It is showing you a version, it's version, of what it thinks the camera is seeing. This is an issue with all mirrorless cameras.

In normal release modes, the Z7 does have a very brief viewfinder blackout. I wouldn't even call it a blackout. It looks like you just blinked and it is so fast that if you aren't paying attention you might not even see it. In "Continuous H (extended)" there is no viewfinder blackout, but the images do come in with a staccato feel to them if the camera or subject are moving. When in Continuous H release mode (not extended), and while shooting at 5 fps, the viewfinder "blinking" still appears and the EVF has a very small time lag but it is so short that I don't think it will really affect anything.

Overall, the EVF built into the Z7 is a major victory for Nikon. I found that the instantaneous what-you-see-is-what-you-get (WYSIWYG) image preview allowed me to experiment more with the exposure and camera settings to get just the image I wanted. When trying to capture

While capturing images at night at the Uranium Capital Speedway in Milan, New Mexico it was so dark that I resorted to motion blurs so as not to crank the ISO up to 25,000 and beyond. Tech Specs: Nikon Z7, FTZ Adapter, AF-S Nikkor 85 f/1.4 G, 1/40th second at f/1.8, ISO 800.

fast-paced action, the EVF—and the histogram in the viewfinder—allowed me to dial in the exposure faster than I could with a DSLR. There are huge benefits with EVFs and it is nice to see they have finally gotten to an acceptable level.

IMAGE QUALITY

As you might suspect, the image quality generated by the Z7 is pretty amazing. Because it uses a similar sensor as that found in the Nikon D850, it is no surprise that the image quality is virtually identical to the D850. I will let others debate the differences in dynamic range, high ISO noise, and lines-per-inch resolution. From what I have seen, the Z7 offers phenomenal image quality.

As you can see in the images in this article, I pushed the Z7 to the extreme edges of low-light photography. These

images were captured at the Uranium Capitol Speedway just outside of Grants, New Mexico. Once the sun went down, I ended up shooting at ISO 3200 and 6400 for the rest of the night to have a prayer at stopping motion. Once it got truly dark, I had to resort to motion blurs and panning the camera. The images shown here in this article were shot for the most part with the FTZ adapter and my trusty AF-S Nikkor 85mm f/1.4 G lens. The camera did exceptionally well in this challenging environment. I kept swapping between my D850 and the Z7 at first then committed to the Z7 to see how it would do. I don't think anyone is going to complain about the image quality.

One last note, when shooting landscapes I found the Focus Peaking built-in to the EVF to be incredibly useful so that you can see exactly what parts of the image will be in focus. In use, it is like a live depth of field preview. For landscape photography the Z7 is a home run.

IN-BODY IMAGE STABILIZATION (IBIS)

One of the best features built into the Z7 is IBIS. It is a revolution for those of us that haven't been using mirrorless. It just stinking works. I was able to hand hold the camera and get a sharp image at 1/6th second! Of course, an image shot on a tripod would be a bit sharper, but still the handheld image was impressively sharp considering the scenario. With my D850, I won't go below a shutter speed of 1/500th second because it is dodgy trying to get sharp images at any shutter speed below that. With larger lenses on the D850, like the 70-200mm f/2.8, I won't go below 1/1,000th second even with the vibration reduction (VR) turned on. Hence, in comparison, the IBIS technology in the Z7 opens up a lot of freedom when choosing the shutter speed and allows for choosing lower ISOs as well since a higher shutter speed isn't required—resulting in better overall image quality because there is less noise in the final image. The image on page 15 from the dirt track are proof of this. Shooting handheld with a 1/40th or 1/80th second shutter speed on the D850 would not have turned out well but on the Z7 it was no problem.

There are some caveats though, as with everything. IBIS can actually detract from the image quality when used at higher shutter speeds, just as VR can. Jim Kasson did some testing with IBIS and recommends that photographers turn it off when shooting at shutter speeds above 1/1,000th second. I have seen this in my own testing where I forgot to turn it off and images shot at 1/2500 second or above seemed less sharp than they should have been. Of course, if you have the camera on a tripod be sure to turn off the IBIS as well so it doesn't affect image quality.

IBIS is a critical feature on the Z series cameras that really helps separate mirrorless cameras from DSLRs. IBIS is also going to be critical if camera manufacturers hope to build cameras with more than 50 MP on a full frame chip as they will be very difficult to hand hold and get sharp images. For many photographers, IBIS might be the best reason to add a mirrorless camera to their kit.

AUTOFOCUS

In my testing I have found that the autofocus on the Z7 is very good, but it is a step or two behind the Nikon D5 and D850. The Nikon D5 has what I consider to be the best AF of any camera currently on the market bar none. I think most sports photographers would back up that

Above, you can see that the Z7 tracked the green go-cart through the frame but just as it exited the frame and moved away from my selected AF focus point it went out of focus. Amazingly, it held focus at the same distance and did lock onto a few of the dirt clods that flew into the air behind the green go-cart after it exited the frame. The Z7s AF did much better than I would have thought given some of the reviews I have seen online—and especially given that it was quite dark when I captured the above sequence of images. Tech Specs: Nikon Z7, Nikkor 24-70mm f/4, 1/1000th second at f/4, ISO6400.

statement. The Canon 1DX Mark II also has great AF, but it isn't quite as phenomenal as the Nikon D5. The Nikon D850 has the same AF as the D5 but with the higher resolution sensor it is not quite as accurate as it is on the faster D5. Still, the D850 has phenomenal AF both in AF-S single point mode and the AF-C tracking modes. The D5 and D850 set an extremely high bar; one that the Sony A9 doesn't even reach. Because it isn't as predictable or as fast as the autofocus in the D5 or D850, I would not reach for the Z7 when shooting fast-paced sports. I just can't predict how well it will track moving subjects and nail the focus like I can with my trusty D850s. For any other genres of photography aside from sports, I would say the AF of the Z7 is more than

capable—and more accurate for portraits than either the D5 or the D850.

Missing from the Z7 are the Group Area AF modes and the 3D Tracking AF mode. 3D Tracking on the D5 and D850 is a revelation so these are serious omissions on the Z7. The Z7 has different AF modes that are new and take some getting used to. It still has the Dynamic AF mode, though it is not as customizable as on their DSLRs. I have found that the Dynamic AF mode (in AF-C) does not seem to track subjects as they move across the frame like it does on Nikon's DSLRs. I am not sure why it doesn't. In AF-C continuous autofocus mode, the camera can predict and track a subject relatively well if you keep the AF point on the subject, but that is quite limiting.

For the night images at the dirt track, I did engage the "Low-light AF" setting to help the accuracy and speed of the AF in the super dark nighttime environment. Overall it did quite well and I experienced little if any hunting. I have seen some other mirrorless cameras struggle quite a bit in situations like that. In comparison, the D850 and D5 are pretty hard to beat in low light conditions, especially when using continuous AF and trying to track fast moving subjects at high frame rates.

The Z7 also has Face Detection in the Auto-AF mode. Face detection seems to work quite well though not as consistently as I would have hoped. If the subject is looking straight into camera then it works well. If they are not looking at the camera or if they turn away it seems to have difficulty reacquiring the face detection. I also had high hopes that the face detection AF could figure out where the eyes were and prioritize the focus on the eyes but that has not been my experience so far shooting with face detection when using large apertures like f/1.4. When I tested this out with my 85mm f/1.4 Nikkor, sometimes it grabbed the eye and focused on it, other times it focused on the nose, the forehead or other random spots. Hopefully Nikon can correct this behavior in future models or with a firmware update. I did find the pinpoint AF to be very accurate when shooting at f/1.4.

Focus Peaking on the Z7 works exceptionally well, especially with fast primes. In one situation there was a dense screen in front of the subject that sent the AF system over the edge and I was forced to use the focus peaking. It resulted in a very high keeper rate even at f/1.4, which is troublesome for any DSLR to work with and get a high percentage of tack sharp eyes. The focus peaking in the Z7 is very well integrated and at the default levels it is very easy to use—plus it is faster than using autofocus in many cases since you don't have to move any focus points around and can recompose quickly knowing that the eyes are still in focus.

FRAMES PER SECOND: 12 BIT VS. 14 BIT

Generally, getting rid of the mirror opens up the possibility of faster frame rates because there is no mirror to flip out of the way. How fast a mirrorless camera can fire depends on the processing power of the camera more than anything else. As there are very few cameras on the market with 40-plus MP sensors, we are basically comparing the Z7 here to the Nikon D850 and the Sony A7RIII.

In the case of the Nikon Z7, it can get up to 9 fps in 12-bit mode and up to 5 fps with AF tracking in 14-bit mode. But there is a caveat here, as with most other mirrorless cameras. When shooting in "Continuous H (extended) mode,"

which is the mode that accesses these highest frame rates, the EVF lags behind reality pretty severely, and the cameras ability to adjust autofocus and/or the auto-exposure may be severely impacted. In reality if you need to track a subject then using the extended release mode is probably not going to work out that well. Hence, these higher frame rates in extended mode may not be as useful as the specs lead us to believe. In reality, when tracking a moving subject, I would stick with the Continuous H mode, which allows for 5.5 fps in 12-bit mode and only 5 fps in 14-bit mode.

The buffer depth on the Z7 is also quite limiting. In 14-bit mode, capturing Lossless Compressed raw images, you will get approximately 19 frames before the buffer fills up and slows down the camera. The Nikon D850 can capture up to 200 images before the buffer kicks in, when capturing Lossless Compressed raw images and shooting at 7 fps without the battery grip. With the MB-D18 battery grip, the D850 can capture around 40 to 50 images at 9 fps before the buffer fills up—and with full AF tracking and auto-exposure. Of course, all of these specs are with the fastest possible XQD memory cards.

I find there is a considerable image quality difference between 12-bit and 14-bit image capture, which is especially visible when images are printed. I have no plans to ever go back to capturing images in 12-bit, especially when the D850 can capture 9 fps in 14-bit and with a larger buffer than the Z7. This is yet another area where the Nikon D850 massively outperforms the Z7. I think it is easy to state at this point in the review that Nikon did not set out to make an action camera when they designed the Z7. For their first camera out of the gate that makes total sense. The number of photographers really needing a top-end action camera is a very small percentage.

All in all, the Z7 can deal with some action, but for those times when I need speed, accurate focus tracking and be able to see what is happening with the subject I will stick with my D850 and the MB-D18 battery grip so I can see more clearly in real time what is happening between frames. Having a mirrorless Nikon like the Sony A9 with zero EVF black out would be very useful—as long as their is no time lag in what you are seeing in the EVF.

VIDEO

In terms of video, Nikon took a massive step with the Z7 to improve their video capabilities. I don't do a whole lot of video work with DSLRs or mirrorless cameras—most of our video work is done on Red digital cinema cameras. Regardless, the Z7 (and the forthcoming Z6) open up a whole new era of high-end 4k recording for Nikon cameras. In my testing the video looks as good if not better than that coming out my D850. The AF in video mode is quite good, even in challenging situations. I love that we can control how smoothly the AF in video mode transitions from one subject to another.

10-bit N-log and 4K focus peaking are the two features that stand out to me. Sadly, to access the N-Log footage an external recording device is required. Just as with 14-bit still image capture, 10-bit video capture massively increases the dynamic range of the camera and gives a lot more room to work up the video in post-production. In my experience, any video capture device becomes a hub that everything else is attached to. There are certainly those times when you can go light and fast and still capture compelling content, but to get top-notch video

footage you likely aren't going to run and gun it. Hence, I find having an external recorder EVF attached to the camera is pretty standard workflow when capturing video. Regardless, a Z7 with all the accoutrements is still a hell of a lot lighter than a fully rigged out Red Helium 8K.

NIKON Z MIRRORLESS LENSES

When the Z series mirrorless cameras were announced, Nikon spent a lot of time discussing the new lens mount with a larger diameter and a shorter flange distance. It was and is a very big deal. This is the first time ever, since 1959, that Nikon has completely changed the lens mount for their cameras. For Nikon users that have tons of old Nikkor glass this change is a big deal, both financially and in terms of how useful that older glass will be on the Z7. Nikon was obviously aware of this, and the FTZ Adapter (discussed below) is their solution but not all older Nikkor lenses will have full functionality on the Z7.

The big deal with the new lens mount is that it simplifies the lens designs and allows Nikon to deal with some major issues they faced when designing lenses for the smaller F-mount. Via DPReview: "The shorter flange-back distance allows Canon (and Nikon) to mount a large rear lens element much closer to the sensor, and the wide diameter means they can create lenses that don't need to squeeze light through a narrow tunnel. Designing lenses that don't have to make such dramatic adjustments to the course of the light passing through the lens allows lenses with fewer optical aberrations. It also gives the option to use fewer elements, which can make some lenses lighter."

The new line of Nikon Z series lenses denoted by the "S-Line" moniker, which stands for "Superior," have been touted by Nikon as "a new dimension in optical performance." I have no doubts that they will be able to push these new lenses to a whole new level of performance because the optical path of the light will be much simpler than it had to be with the smaller F-mount lenses. Fewer lens elements means there is more light making it to the sensor no matter what the maximum lens aperture denoted on the lens itself. Hence, a 35mm f/1.8 S lens might allow more light to get to the sensor than the Nikkor AF-S 35mm f/1.4 lens because there are fewer lens elements to refract light back out of the front of the lens.

Higher resolving lenses are going to be a huge part of Nikon's future—and have to be for them to release

ever-higher megapixel camera bodies. When Nikon says the Z mirrorless system is the future of the Nikon camera system, they really mean that in more ways than one. Having cameras with IBIS installed in the camera body and lenses that can resolve at a much higher level than their current line up are going to be key elements when they do announce camera bodies with 50-plus MP sensors. And to be sure those are coming.

I received the Nikon Z7 along with the Nikon 24-70mm f/4 S lens. I did a comparison of my trusty Nikkor AF-S 24-70 f/2.8 lens (on the Nikon D850) versus the newer Nikkor 24-70 f/4 S on the Z7 and found that at 70 mm these two lenses are fairly similar. The extreme corners are a bit softer on the 24-70 S lens but not by much. Both are very good at f/5.6 up to f/11. The 24-70 f/4 S was sharper in the center at f/4 but otherwise there was not a huge difference. At 24mm there is a stark difference. The corners are much sharper on the 24-70 f/4 S lens (at 24mm) than the f/2.8 F-mount lens. Also, there is a noticeable amount of chromatic aberration (CA) in the f/2.8 F-mount lens while there is little to no CA on the 24-70 f/4 S lens. The lack of CA on the F/4 S lens is quite amazing actually.

At all zoom settings on the 24-70 f/4 S I did find there to be a significant amount of vignetting, much more than on my Nikkor AF-S 24-70 f/2.8. This is easily corrected in post-production. Additionally, I found that with the 24-70 f/4 S lens the very extreme corners and edges of the frame seem to drop off in sharpness quite rapidly compared to the rest of the frame. This has been reported by a number of other testers as well so it wasn't just my copy of this lens. This might all sound a bit nit-picky but when Nikon touts these new lenses as "superior" and better than their older Nikkor F-mount versions that is quite a statement that needs to be investigated.

All in all, the 24-70 f/4 S lens is quite good and consistently sharp across the zoom range, which cannot be said to the same degree for the f/2.8 lens. The vignetting and corner softness is an issue to be aware of but it doesn't

negate the overall performance of this lens. The 24-70 f/4 S is a great expedition lens and a perfect companion to the new Z series cameras in terms of size and weight.

What is very exciting about the new lens mount is where Nikon is going with this new system. The Nikkor Z 58mm f/0.95 S Noct Lens announced alongside the Z7 and Z6 (but not yet shipping) is a very exciting new lens—even if it is a manual focus lens. This lens is going to be giant—a real beast of a lens—and it is going to cost a small fortune. But, it might also help us realize the full potential of the new lens mount and hopefully offer breathtaking optical excellence. I think offering this new lens as a manual focusing lens is a good idea on Nikon's part as f/0.95 is going to be touchy in terms of getting your subject in focus. The Focus Peaking built into the Z series cameras will be all but essential in focusing this beast. I imagine for most photographers, the Nikkor Z 58mm f/0.95 S Noct Lens will be a lens that they rent rather than own.

Knowing that the Z series cameras are the future for Nikon and that mirrorless in general is the future of photography, I don't plan on buying any more Nikon F-mount lenses. A few of my older F-mount lenses are starting to show signs of wear and tear and I will wait to replace those with the newer Z-mount versions when they became available. Hopefully Nikon can release the Z-mount f/2.8 standard zooms, like the 24-70, 70-200 and a 14-24 equivalent, as soon as possible so that users can take advantage of native lenses on the new Z series cameras.

FTZ ADAPTER

The FTZ adapter (shown at right) that came with the Z7 in the kit I ordered, allows for just about any F-mount Nikkor lens—or any Nikon F-mount compatible lens from a third party manufacturer—to fit onto the Nikon Z7. The FTZ is very well built and fits onto the Z7 lens mount with a snug, secure click. When an F-mount Nikkor lens is attached to the FTZ adapter there is no wiggle or wobble in the lens mount on either end of the adapter. Both sides of the adapter also have gaskets to maintain a weatherproof seal at each mount interface, which is a very nice touch.

I have used just about all of my Nikkor F-mount lenses on the Z7 and they all work very well. I did notice that the autofocus is a touch slower when using the FTZ adapter—as compared to using those same lenses on my D850. It is very hard to quantify how much slower my F-mount lenses focused on the Z7 using the adapter. Overall, I am very impressed with the FTZ adapter and until Nikon can release more Z series native lenses the adapter bridges the gap as far as lens options.

BATTERY LIFE

Lots of hoopla has been made about the poor battery life given that CIPA rated the battery at only 310 shots per charge. After shooting with the camera for a month now, the reality is quite different. I got over 2,000 shots on one

battery during a full 15-hour day on a recent assignment. I am not saying you will always get 2,000 images per full charge, but I would be surprised if I couldn't average 1,000 images per full charge. It all depends on how you have the camera set up. I have it set up so that the EVF turns on when I put my eye to the viewfinder, otherwise the rear LCD is not on unless I switch to it and turn it on. I imagine this saves a fair bit of juice, but it also makes the camera respond similarly to a DSLR, which is what I am used to. I have no qualms with the battery life.

In video mode, the camera eats through the batteries quite a bit faster—as is usual with DSLRs as well. On my D850 I can go through one EN-EL15a battery in about 30 minutes when capturing 4K video. On the Z7 it eats through the EN-EL15b battery just a hair quicker at around 20 minutes or so.

COMPARED TO THE NIKON D850

Up to this point in the review, it might seem like I have been a bit harsh on the Z7, especially in these last few sections. The main camera I am comparing the Z7 to is the Nikon D850, which is probably the best DSLR ever created by human beings. Hence, the Z7 has a lot to live up to if it wants to match the D850. The big question is how does the Z7 compare to the D850 and does it replace a D850? I can emphatically say right off the bat that the Z7 is not a D850 replacement for a number of reasons. The autofocus capabilities and frame rates of the D850 are superior to the Z7 in pretty much every way. For fast-paced action, the 3D Tracking AF mode of the D850 is much easier to use and much more accurate than any of the continuous autofocus modes built into the Z7. And in terms of bit-depth, I have no plans to go backwards to 12-bit image files just to get a faster burst rate. [Hell, I have not even owned my D850s for a full year yet so they are definitely not old and out-of-date.]

As shown above, the Z7 is significantly lighter and smaller than my D850. I do see how it would be a better option in some scenarios, especially when I have to carry a lot of outdoor gear and want a lighter setup—and don't need fast frame rates or top-end autofocus capabilities. The

silent shooting mode built into the Z7 also makes it quite useful in some circumstances. Technically the D850 also has a silent shooting mode but it is not nearly as advanced as the Z7's silent mode and still requires the mirror being moved out of position, which is not silent.

The Z7 is a different camera than the D850 and has different strengths and weaknesses as well. Because of that I can definitely see adding a Z7 (and/or a Z6) to the quiver but I won't be trading in either of my D850s for a Z7. I can definitely see that Nikon has consciously designed the Z7 (and the Z6) to excel in some ways beyond their DSLRs but not overtake the dominant features of their top-end DSLRs. That makes total sense since they are one of the few mirrorless camera manufacturers (aside from Canon) that also make DSLRs. It will be very interesting to see what the future Z series cameras look like and how they compare.

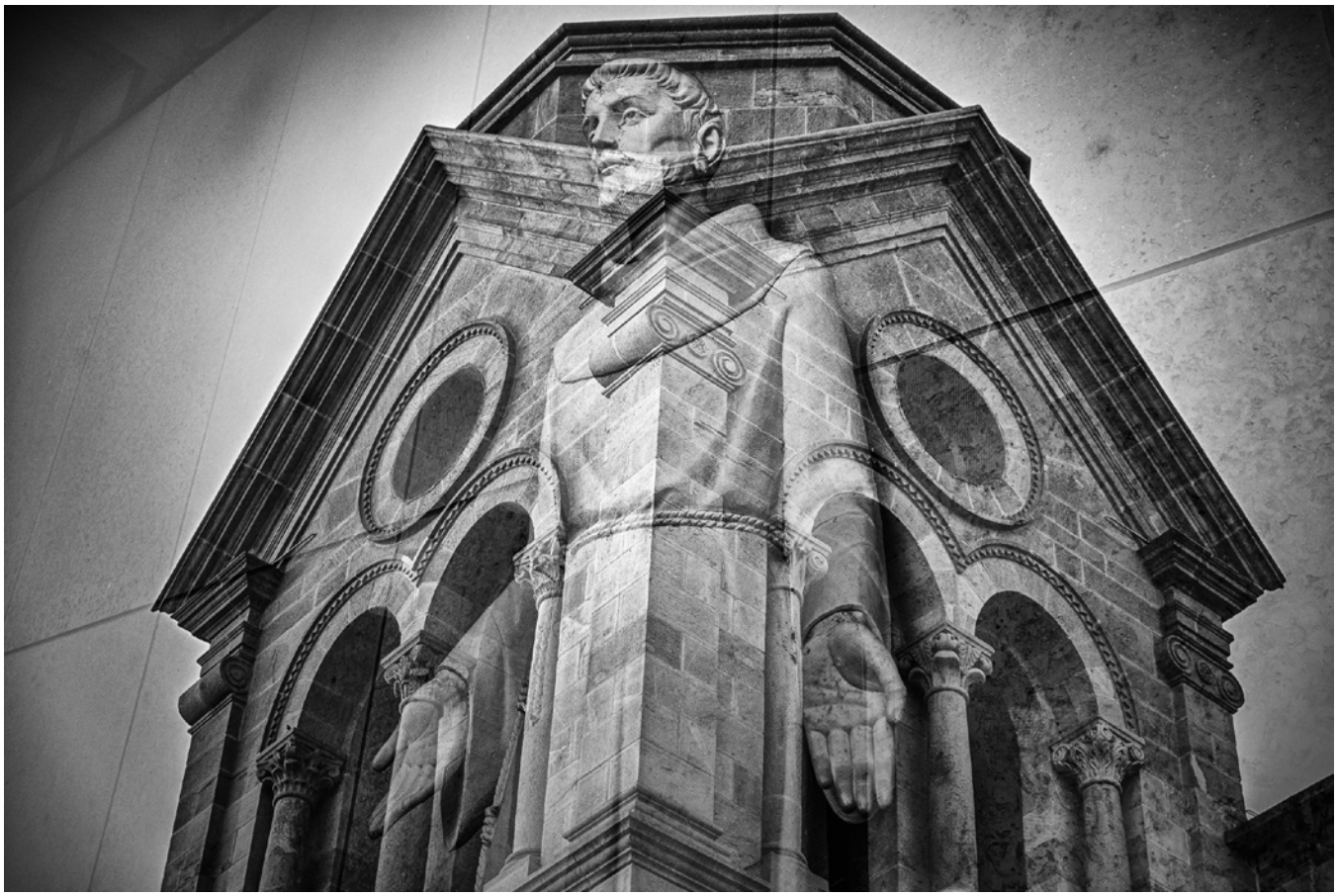
XQD MEMORY CARD

There is only one memory card slot in the Z7. Everyone went crazy about that. My Hasselblad H5D 50c WiFi only has one memory card slot. It doesn't really matter to me. When I shoot action with my D850, I always shoot to just one XQD card as shooting to two cards would slow the camera down. I have had SD cards fail but the images are always recoverable in my experience. I know those photographing weddings and events "where it will never happen again" get all bent out of shape about this. As an adventure photographer a lot of what I shoot will never happen again and not the exact same way ever. I think the issue for a lot of card failures is photographers buying cheap memory cards and then abusing them to no end. If you use good practices with your memory cards and buy the top-end cards then card failures are so rare that you won't even think about it. Most pros I know typically buy faster memory cards when they upgrade their cameras so they end up refreshing their memory card stock every few years, if not sooner, which certainly helps as well.

I do applaud Nikon for choosing the XQD memory cards, which in my experience are a billion times better than any other card type. If you ask me, every camera should be using XQD memory cards. They are just the best cards on the market, and they are the fastest. I wish my Hasselblad used them. I have never (knock on wood) had an XQD memory card get corrupted. The XQD cards are the perfect size and they are tough. There are also no pins or any exposed parts that you have to worry about getting bent or beat up. For those that want a fast workflow, the XQD cards download much, much faster than the average SD or CF card. And the fact that the Z7 will have updated firmware here at some point allowing it to use CFexpress cards next year is very exciting as those will be even faster than XQD cards. Hopefully Nikon will bring out more pro-oriented mirrorless cameras in the future with slightly larger bodies and dual card slots but for now the single memory card slot is fine for me.

MULTIPLE EXPOSURES

The way in which Nikon has integrated the multiple exposure feature into the Nikon Z7 is quite ingenious. When you turn it on and capture the first exposure, it shows an overlay of that first exposure while you shoot the second exposure so that you can line them up just as you want—and see the effect that the exposure settings will have on the overall image. Capturing multiple exposures has never been—at least as far as I have ever seen—this easy or



exciting. This feature opens up a whole new world of creative options and honestly, it is one of the most exciting features on the Z7. As can be seen in the image above, I spent an afternoon capturing a few double exposure images around Santa Fe, New Mexico testing out this feature and had a blast seeing what I could come up with.

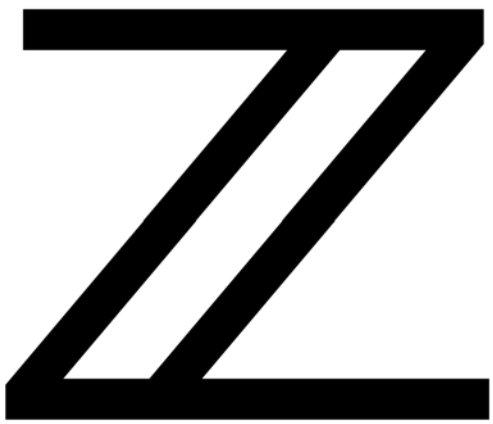
The only downside to the Z7 multiple exposure system is that it outputs a JPEG file when you create the multiple exposure image and there is no way to change the file format settings for the output image as far as I can tell—and I scoured the user manual to see if there was a way to change it. The Z7 does save the separate images used to create the multiple exposure image as individual images in whatever file format the camera is set to so you could go into Photoshop and re-create the combined image, but it would be great if Nikon can change this to output a raw image file or at the very least a TIFF file instead of a JPEG. Nonetheless, this is still an exciting feature and one that really allows the photographer to create images that would be very difficult, if not impossible, to create without this built-in visualization technique.

CONCLUSION

Considering this is the longest review I have ever written for any camera, it won't take long to wrap this up. I have pretty much said just about anything and everything I can say about this new camera. The Z7 is a stellar offering, especially considering it is Nikon's first full-frame

mirrorless camera. Sure, there are some things I would like to see improved upon in future iterations but as far as a first offering, the Z7 leaves very little to be desired for the average photographer.

One thing that is probably crystal clear by now if you have read through this entire review is that the Z7 was not designed to be a full-on sports camera. Sure it can still be used as such, but Nikon has other cameras that are much better suited to that role, namely the D5, D500 and D850 in their DSLR lineup. I hope that they come out with a mirrorless full-frame offering in the future that can match their venerable D5 and D850—and I have not doubt that they will at some point. I know the Z7 is touted as being a pro-caliber body, but it seems like Nikon has also left some room for a faster, more advanced mirrorless camera to slot in just above the Z7.



For those of us with a large quiver of F-mount Nikkor lenses, if we want to stay current with cutting-edge technology, what is scary to think about is that we will have to replace pretty much every F-mount lens and all our camera gear at some point over the next few years after taking decades to build up our systems. This won't be happening overnight but as the used lens market starts filling up with F-mount Nikkor lenses the prices we can sell those lenses for will drop precipitously.

I have no doubt that the advantages of mirrorless systems (and EVFs) will continue to separate them from the DSLR equivalents as time marches on. It has certainly been very exciting to test out the Z7. At this point, I chose to send back the Z7 and the 24-70 S lens. Because it could not match my D850, I am holding off on the mirrorless conversion for the moment. I will be diving into the mirrorless waters one way or the other soon, it is just a matter of deciding which option—the Z7 or the Z6—is a better addition to my current kit and I am waiting to see what other native Z-series lenses Nikon releases in 2019.

One thing that is very clear to me, now that pretty much all of the camera manufacturers have announced their mirrorless offerings, is that I won't be changing systems. Nikon's first full-frame mirrorless cameras are much more compelling than any other brands offerings—and I can see them rapidly improving this already impressive first generation Z-series camera. More than just the cameras, I can see them creating some very exciting lenses for this system that sets a new high-bar in optical design and image quality.

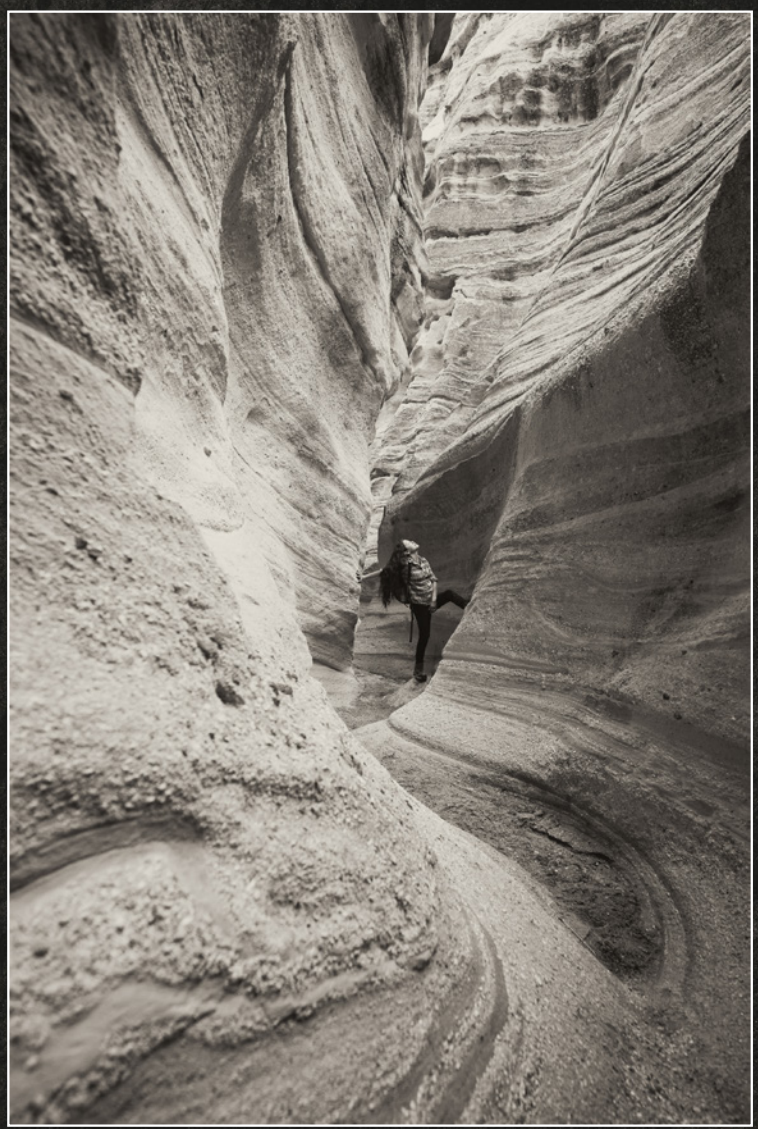
My thanks to B&H Photo and Video for sending me this camera to test out. For more information, and to order the Nikon Z7 (along with the FTZ adapter) click on the following links: Z7 with FTZ adapter and 24-70 f/4 S lens and Z7 camera body with FTZ adapter. The Nikon Global website also has a lot of great information on the Z-series mirrorless cameras.


on assignment:
MERRELL
#ONETRAIL
50 Photographers. 50 States. An unscripted portrait of America.

On September 1st, 2018, Merrell sent out fifty photographers, one in each State of the United States, to document hikers and climbers on their favorite trails. The project, named the #OneTrail project, was organized and produced by the venerable Camp 4 Collective. It's intention was not to show off Merrell's latest product offerings. In fact, the brief we were given had no mention of the product at all. The intention was to "celebrate diversity and inclusion on our nation's trails. I was honored to be among those fifty photographers chosen to participate in the project and living in Santa Fe, New Mexico I chose to capture images of hikers at the Kasha-Katuwe Tent Rocks National Monument.

Tent Rocks has become quite the tourist destination and as such there are hundreds of hikers on the main Slot Canyon Trail. On the morning of September 1st, the day was gloomy, rainy and threatening. For the start of the assignment, I was actually quite happy to see the threatening weather as it might keep the crowds away at least for a little while. For this assignment I asked local friends Rachel de la Torre, Sharon Anne Henderson and Matthaios Tzanakis to join me for the morning so that I would be assured of having people to work with—at least for the first few hours. Luckily, the slot canyon was fairly empty for the first hour or so and after that the number of people filtering through became an issue in terms of us holding back the tide. Once I had a base number of images I let Rachel, Sharon Anne and Matthaios go and hiked around asking hikers to pose for photos at various spots along the trail.

The images you see here in this article are the ones that were chosen by Camp 4 and Merrell for the campaign. All of the images were worked up by Tim Kemple. On page 35 you can see how all of the images were put together for one double page ad. The images have also been used on social media and at trade shows. Notably, Merrell printed most of the images and created an entire trade show booth display that was unveiled at the Fall 2018 Outdoor Retailer show in Denver, Colorado. My thanks to Camp 4, Tim Kemple and Merrell for bringing this project to life. To see more images from this project visit the OneTrail website.



Pages 32-33: The Slot Canyon Trail in Kasha-Katuwe Tent Rocks National Monument near Cochiti Pueblo, New Mexico. Pages 34-35 (double page spread): Looking straight up at the sky above the Slot Canyon Trail in Kasha-Katuwe Tent Rocks National Monument near Cochiti Pueblo, New Mexico. Left: Sharon Henderson hiking in Kasha-Katuwe Tent Rocks National Monument near Cochiti Pueblo, New Mexico. Right: One of the final ad layouts for the Merrell #OneTrail project.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On September 1, 2018, 50 photographers, from 50 states,
set out to document their favorite trails. What they created
together is an unscripted portrait of America.

Above: A portrait of Sharon Henderson hiking in Kasha-Katuwe Tent Rocks National Monument near Cochiti Pueblo, New Mexico. Right: A trail marker for the Slot Canyon Trail in Kasha-Katuwe Tent Rocks National Monument near Cochiti Pueblo, New Mexico.

Right: Tent formations on the Slot Canyon Trail in Kasha-Katuwe Tent Rocks National Monument near Cochiti Pueblo, New Mexico. Below: Rachel de la Torre getting creative while hiking in Kasha-Katuwe Tent Rocks National Monument near Cochiti Pueblo, New Mexico.


portfolio

excerpt

Random Thoughts on Mirrorless Cameras

A sea-change in photographic equipment and the growing pains of digital photography

Over the past year or more, in anticipation of this time—where Nikon, Canon and everyone else would jump on the mirrorless train—I have been testing out and thinking a lot—too much really—about the equipment I use and what the future holds. It has been clear for a while now, at least to me, that mirrorless cameras are the future of photography. There are a number of reasons for this but chief among them is that to take 35mm full-frame sensors beyond 50 megapixels and have the ability to get sharp handheld images the mirror has to be removed. The mirror causes way too much vibration. It also doesn't allow for In-Body Image Stabilization (IBIS), which is key for getting sharp images at reasonable shutter speeds with super-high resolution sensors. Additionally, the DSLR lenses, at least those in the Nikon and Canon ecosystems, are not able to deal with the higher resolution demands of 50-plus MP sensors—or at least they would not deal with it well. Hence, both Nikon and Canon have created larger lens mounts to allow them to create next-generation higher resolving lenses.

It is only a matter of time until mirrorless cameras mature to where they will be the clear favorite over DSLRs for all genres. For many genres, mirrorless is already a clear favorite. I don't know that we are there just yet for fast-paced sports photographers like myself, but we aren't far off. For working professionals, to stay competitive and even improve our photography, pushing the envelope not only with our skills but also with the available technology is tantamount for staying relevant—at least in the adventure spots genre I inhabit. While testing the Nikon Z7, it has got me thinking a lot about how it or any mirrorless camera will be used in tandem with DSLRs and medium format digital cameras. It has also got me thinking about the giant expense coming soon to replace my entire DSLR kit, that I have built up over decades, with a full-fledged mirrorless kit.

A mirrorless camera changes how you shoot. Because there are both an electronic viewfinder (EVF) and a rear LCD, and both are showing the exact same image, I find that I shoot much more often from the hip than I would with a DSLR. I also find myself fine-tuning the image in-camera more than I would with a DSLR. With a DSLR, I am primarily just trying to record image data with a pleasing composition and a satisfactory exposure. I worry about tweaking the final image in the post-processing. With the mirrorless, I am comparing how the subject looks at a normal exposure—or with an underexposed or overexposed look. I can see immediately if underexposing the image brings color back into the sky or darkens my subject too much. The live histogram is perhaps the best thing about mirrorless and it is something I have been asking for in DSLRs for more than a decade.

Mirrorless cameras offer some serious advantages in terms of speed and ease of use. The live preview image and histogram in the EVF allow you to dial in the exposure exactly as you want without having to shoot an image and then check the LCD as with a DSLR—and then have to shoot another image with new settings, and check it again and so on. Instead, with a mirrorless camera, you can see how the exposure affects the image in real time by looking through the viewfinder and changing settings to dial in the look and feel of the image exactly as you want. This is referred to as "what-you-see-is-what-you-get" or with the acronym WYSIWYG. This massively speeds up the entire process of getting the exposure just where you want it. Going back to my D850 was tough after getting used to this on the Z7. I can see now why DSLRs would seem quite clunky to those that have only used mirrorless cameras. Also, having a built in loupe, i.e. the EVF, to review images even in bright sunlight is a huge bonus, especially if you are using flash or strobes.

Having a live preview of what the image will look like allows for a more artistic decision making process as to how you want the final image to look—at least before raw processing. I would even say, it gets the image farther towards the final look in-camera and in some cases speeds up the post-processing workflow. With the live preview in the EVF providing WYSIWYG, you can see that the image is better dark, or maybe you really want those highlights to blow out. Being able to see and compare the differences in the EVF or on the back LCD live allows for an immediate decision making process that is difficult to duplicate on a DSLR—or at the very least it would take a lot longer to work out on a DSLR.

While using the tiny Z7 camera body with the 24-70 f/4 S lens on a recent assignment, I had a discussion with the

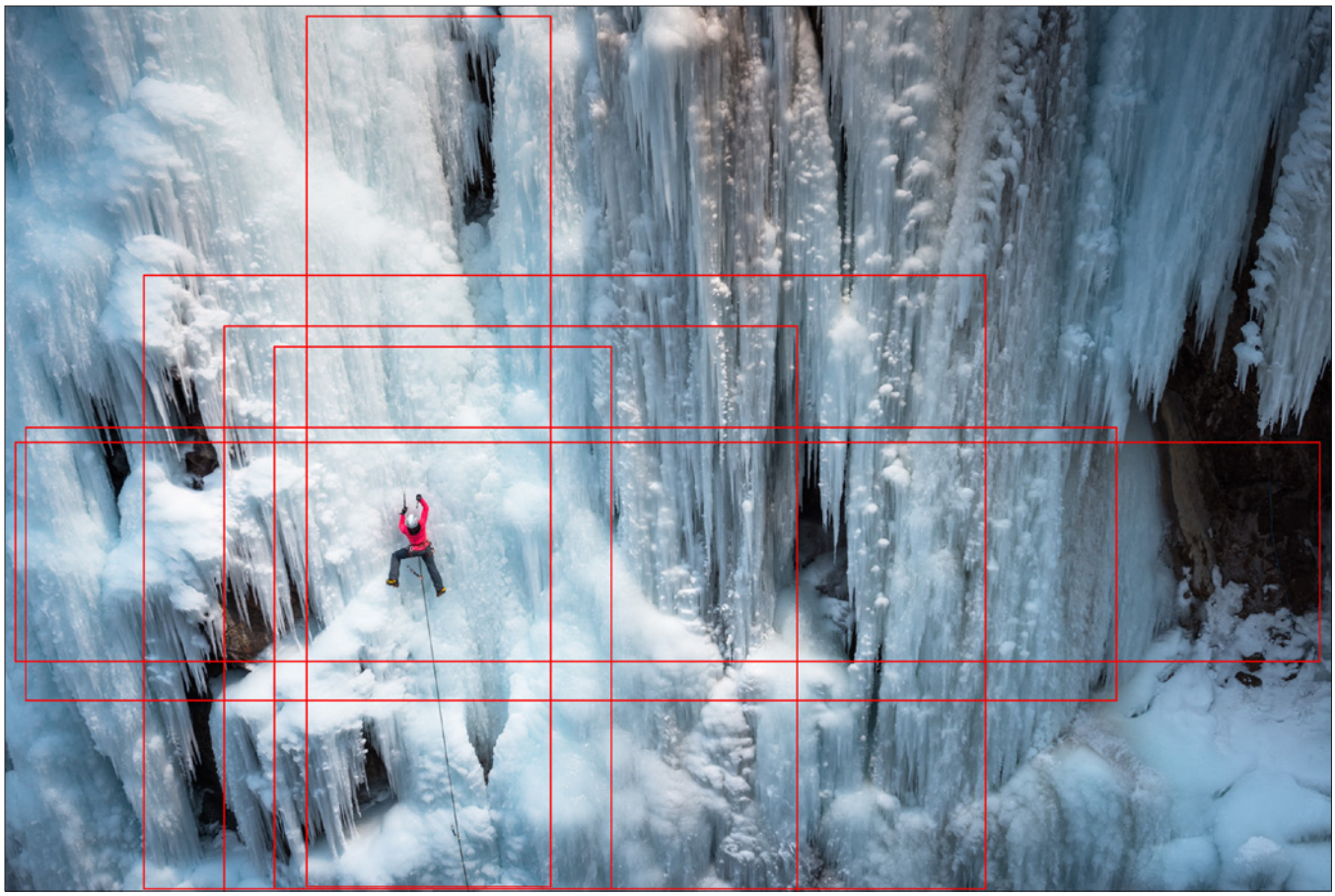
video crew about showing up with such a small, lightweight camera on a big assignment where you would be charging the client tens of thousands of dollars. The video crew by the way was lugging around a full Red digital cinema camera with five honking huge cine-prime lenses, which made the comparison that much more relevant. Everyone who passed by us was blown away by the video rig and said nothing of the Z7 because it looks like any other consumer camera to the general public. I realize the final images are all that counts, but on some jobs the size of the camera matters in terms of the client feeling like they are working with a top-end photographer.

In terms of size, Sony and Fuji seemed to have come out with the smallest and lightest mirrorless offerings. They dictated the form factor and for years hyped the small, lightweight nature of these cameras. Then reality hit the masses when they realized you can't bend the laws of physics. If you want an f/2.8 lens on a full-frame camera it will be the same size on a mirrorless as it would be on a DSLR and in most cases it might even be slightly larger to account for the shorter flange distance. Hence, that slightly lighter mirrorless camera body isn't really that much lighter overall. Further, when you take into account the poor battery life of most mirrorless cameras compared to equivalent DSLRs, and the need to take a few more extra batteries, that weight savings evaporates very quickly. Now that the weight advantage of mirrorless is well understood as a myth, save for when using f/4 and lighter lenses, if we are going to shoot with f/2.8 and faster lenses what is the point of a small form factor for the camera?

It is nice to have a camera that is smaller for expeditions and when weight is a huge concern—and I am all for that—but for a lot of jobs, having a larger camera that is mirrorless might be nice. A larger mirrorless camera body can have more buttons and dials and better ergonomics, like the D850, and still be a mirrorless camera with all the advantages therein. It would also balance better on the larger f/2.8 lenses and it could have larger batteries to overcome the battery life issue. Thinking it through, I don't think we have yet figured out what size is the best overall for mirrorless camera bodies.

My hope is that going forward we can have both smaller and larger mirrorless offerings. A small form-factor full frame mirrorless camera, like the Nikon Z7 or Sony A7RIII, is a great option. I hope that in the future we continue to have these smaller mirrorless options and also a slightly larger mirrorless option with better ergonomics—and the same lens mount. Of course, for the current crop of mirrorless cameras a battery grip can certainly go a long way to making the cameras appear slightly larger and on a lot of assignments, where weight isn't a concern, I would definitely attach a battery grip to my mirrorless camera if for nothing else than for the appearance of bringing a larger style camera to the assignment. But I hope the camera companies see the benefit of a slightly larger mirrorless camera body. As an example, the size of the Hasselblad X1D is just about perfect.

One question I hear from a lot of photographers is why do we need these super high-resolution cameras? For the working pro, it may be that they need the resolution for huge prints, but those making huge prints are pretty rare. The real reason for super high-resolution cameras is due to higher resolution monitors (think Apple 5K Retina Displays) and the strange crop and aspect ratios associated with modern digital advertising. While teaching at a



recent photography workshop for Summit Workshops, Scott Wilson, who is the Managing Director at Sandbox Motion, showed us a slide with all the various crops pulled from one still image for a clients online adverting needs—including web banners (both horizontal and vertical), Instagram, Instagram stories, Facebook, website homepage images, and other various crops. As shown above, I have had similar requests from recent clients to crop images for various online uses. When cropping an image so massively, if you aren't using a fairly high-resolution camera (i.e. 40-plus MP), then the resulting crops have very little resolution, which can come back to bite you if an extreme crop is displayed on a high-resolution monitor. The image above is an example of how the image might be cropped to a variety of different sizes and aspect ratios. This is the new reality of modern advertising photography.

As with any camera system, there are advantages and disadvantages with mirrorless cameras—as it stands right now. Mirrorless has a distinct advantage in terms of the lack of vibration, better optimized lens options, WYSIWYG, live histograms, live focus peaking and a very intuitive interface. The downside, at least for right now, is slightly slower autofocus for those of us trying to capture fast-moving subjects. For pretty much any photographer that doesn't need the ultimate in autofocus technology mirrorless is there already—it is good enough. For the rest of us, it is just another tool in the bag. Regardless, it is a very exciting time to be a photographer.

The Instagram Game

by Michael Clark

While teaching at a recent Adventure Photography workshop for Summit Workshops up in Jackson, Wyoming, one of the main topics that seemed to take over every business conversation was Instagram. During one round table conversation, Sadie Quarrier, a senior photo editor from *National Geographic*, said they find most of their photographers on Instagram these days. That wasn't shocking to me. I have heard a number of other photo editors say the same thing. For professional photographers, Instagram is not just a fun app we use occasionally. It has become an interactive online portfolio and a major part of our marketing. As with all professional photographers, there is an uneasy relationship with the app—mostly because it is constantly in need of being fed new and stunning imagery.

The beauty of Instagram is that we now all have a way of publishing our images to the world. Some photographers have a huge number of followers, which has led to huge opportunities. On the other end of the scale, many of the top professional portrait photographers in the world have a relatively small number of followers—and yet they are still in great demand because they are incredible photographers. How to build up a following is a constant topic of debate—and in that workshop that was the main topic when Instagram was discussed. In my experience, the best way to build up a following is to create amazing work and then have an account with a giant following consistently post your work with a link back to your account.

Regardless of the numbers, Instagram is a hot bed of activity that can be monetized with the right approach. Figuring out how to monetize it is the trick, but I would suggest messaging those companies you would like to work with through the app and see what happens. Instagram is a huge part of marketing these days so if you are producing quality images be sure to get paid for them—even if they are only used on Instagram. I have been hired to shoot only for Instagram on a few occasions and those "Insta-assignments" in every instance paid very well.

I find it hard to keep the Instagram machine fed with new images, especially when a lot of my assignments have embargoes that don't allow me to show the images until several months later. I am upbeat about Instagram. It is a fun app and I have gotten opportunities that I wouldn't have had if not for the app. Truth be told, Instagram pushes me to be a better photographer so that I can make images that will stand out from the crowd of amazing talent I see on the app—and it has given me a megaphone to the world (especially on the @natgeotravel and @natgeoadventure accounts) where I can share my images and interact with people that would have never found my work otherwise. Follow me at @michaelclarkphoto.

parting shot

One last image captured for the Merrell #OneTrail campaign. No this image isn't 100-years old, it was captured just last month with a digital camera. Thanks to Tim Kemple's amazing post-processing this image looks like a tin-type image from a century ago. Pictured here are several tent rock formations nestled deep in the Kasha-Katuwe Tent Rocks National Monument near Cochiti Pueblo, New Mexico.