

THE NEED FOR SPEED

Photographers use the control and performance of today's power packs to create spectacular strobe-lighting effects. By Theano Nikitas



Eadward Muybridge and Harold "Doc" Edgerton pioneered high-speed photography, Muybridge with his animal locomotion work in the late 19th century and Edgerton with his stroboscopic photos of liquid splashes and a bullet piercing an apple in the 20th century. These photographic explorers paved the way for today's photographers who are using 21st century tools to create images that would make those early pioneers of high-speed photography proud.

We interviewed four photographers to get some insight into their techniques and the gear they use to capture motion and high-speed images.

SARAH SILVER: AT THE SPEED OF LIGHT

For Sarah Silver, movement and photography are almost synonymous, creating a synergy that extends from her work with dancers to images she creates for fashion and beauty clients. Capturing movement, says Silver, takes "good gut instinct, quick reflexes and a lot of practice shooting movement."

After that, the next challenge is "keeping the images fresh, the work modern and not dated or gimmicky," which she accomplishes with her high-speed shooting (with a little help from trampolines, fans and assistants tossing buckets of water). It also helps that fashion and hairstyles change from season to season, giving her a constant source of new inspiration.

Silver shoots with a Hasselblad 503W body—and its "super sharp Zeiss lenses"—with a Phase P45+ digital back, tethered to a souped up G5 tower with dual Eizo monitors on a custom cart.

When shooting movement, looking through the lens often feels "too limiting," so Silver locks down the camera, pre-focuses and triggers the shutter remotely. This gives her the freedom to interact with the model(s) and concentrate on capturing the "peak moment." (If you've ever seen her shoot, you'd understand why she prefers using a remote release for these types of shots; her enthusiasm and energy can motivate even the most reticent subject.)

Look for our story on PDNOnline.com in February on the redesign of Sarah Silver Photography—logo, Web site and portfolios—to promote her fashion, beauty and dance work as one cohesive brand.

Opposite page: In this photo by Sarah Silver of the Stephen Petronio Dance Company, buckets of water were dumped on the dance troupe and set-ups included a baby pool, multiple water pumps and a pond liner. Above: Silver used rear curtain sync, a slow shutter speed, and a combination of strobes and continuous lights to capture each of these seven shots for a Nike ad, which shows the evolution of its running shoe.

As a student, Silver tried different camera and strobe systems and decided on Broncolor packs (she uses SCORO A4's) since they allowed her to "dial in the flash output [flash duration] with total control." She basically built her entire gear kit around the Broncolor packs.

She's been photographing and collaborating with the Stephen Petronio Company for ten years, using her work with Petronio and his dancers as inspiration for many her fashion images. Working with the dancers she'll "do something that bends the rules of movement" and then use it for a fashion or beauty client, like a "Muybridge-esque" running sequence she shot for Nike. (See image above.)

Rear curtain sync, a slow shutter speed and a combination of strobes and continuous lights were required to capture each of seven shots. "I had to start the runner, open the shutter early to catch the left body trail and then time it with the flash going off at the 'right' part of the run." The goal was to create an ethereal feeling where the trails overlapped but also to make sure the Nike logo was readable on the shoes (if not, they had separate shots of the shoes that they could comp in with Photoshop). Once that was accomplished, Silver and the art director put together a mock-up, combining all seven shots, in Photoshop.

Always up for a challenge, Silver, Petronio and his dancers collaborated on shooting with large splashes of water. Splashes is probably an understatement, though, given it was buckets of water that were dumped on the dancers. Set-up included warming the water on the studio's stove, using a baby pool, multiple water pumps and a pond liner.

Timing was even more challenging. "The water had to fly in advance to meet the dancers at the right moment in the air. Then, of course, I had to get my shutter's timing right as well," explains Silver. Using a combination of hot lights (placed from behind or off to the sides), the Broncolor strobes on high flash duration (around 1/1230th of a second) and a slow shutter speed on the camera, the water itself took on a different appearance depending on when

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the water was flung in relation to when the shutter was released. "When the water was hurled early, it looked like molten glass; late and it looked like fireworks because of the way the light caught the water," explains Silver.

Inspired? Check out more of her work on www.sarahsilver.com and keep your eyes peeled for a high-speed photography workshop in New York City she'll be leading in the first quarter of 2011 at www.bronimaging.com.

NICK FERRARI: FORMULA ONE

If Sarah Silver's Nike image is "Muybridge-esque," then Nick Ferrari may well be channeling "Doc" Edgerton with his high-speed splashes and shattered objects. Capturing these invisible-to-the-eye moments, Ferrari has brought new meaning to his "still life" work.

He first started working with high-speed shoots when he was assisting. Ferrari recalls that, "I was on set for an Herbal Essence ad shoot in which five Herbal Essence products were epoxied together, floated against a background and doused with buckets of water. It was pretty cool and I wanted to try it."

For his high-speed shoots, Ferrari usually uses a Phase One back on his Mamiya RZ or, if he needs to have "tight control of the focal plane," he'll attach the back to his Sinar P2 4x5. Though he'll occasionally shoot with the Canon 5D, with the Phase One he can "pull the frame back a bit and get a larger depth-of-field without losing much resolution."

Below: In order to facilitate his high-speed capture of splashes and liquid, Nick Ferrari has built some specific sets using a variety of materials, depending on the angle of the shot.

Flash durations on the Grafit 3200 packs are measured at t.1 (the time between when the flash output reaches 10 percent of output, peaks at 100 percent and falls below 10 percent output). Most other strobe brands, says Ferrari, "measure at t.5 [which measures from 50 percent of output, up to 100 percent and back down to 50 percent], which doesn't measure a lot of the light output." The t.5 method, Ferrari explains, "gives a deceptively fast flash duration measurement which isn't accurate when you are trying to eliminate blur in high-speed photography."

Even with the Broncolor's, says Ferrari, "You have to use pretty low power settings to get a fast flash duration. It's a balancing act between power/flash duration and using a small enough aperture to allow you enough depth-of-field for your shot." If necessary, more lights can be added so the lens can be stopped down even further.

As with any high-speed image capture, one of the biggest challenges is getting fast, consistent flash output. Although he plans to try out the new Broncolor Scoro packs the next time he shoots high speed, he currently (and exclusively) uses Broncolor Grafit 3200 packs because "they have the fastest flash duration of any studio power packs that I know of."



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Ferrari always shoots in RAW and generally sets the shutter speed to 1/80s. He may adjust the shutter speed if there's a lot of light on set and he needs to "shut out ambient light."

In order to facilitate his high-speed capture of splashes and liquid, Ferrari has built a few sets specifically for those shoots, using a variety of materials, depending on the angle of the shot. "Usually I build tanks out of half-inch Plexiglas but if I need to shoot through the tank, I use special 'white' glass or glass with a low iron content [to reduce tint] and high optical quality."

Although high-speed photography currently comprises less than 10 percent of his shoots, he expects that number to rise especially since he's recently built some new sets. You can check out more of Ferrari's high-speed images at: www.nferrari.com

RYAN ENN HUGHES: MOVEMENT IS HIS MESSAGE

Watch the behind-the-scenes videos of Hughes at work and you'll see that this Toronto-based filmmaker/photographer likes to move when shooting his motion projects. He started out as a filmmaker, switched to still photography for a couple of years, and now has come full circle, creating motion video with still cameras—a process that is "inherently interdisciplinary" and perfect for an artist who is drawn to working with a variety of media.

Hughes has been experimenting with high-speed photography for a couple of years and while he's created stop-motion pieces, he thinks of the still camera "as a motion camera that shoots at ten frames per second" and just happens to deliver the same kind of feeling of his old 16mm Bolex.

His interest lies in "building the moving image with the still photograph because of the file size and quality that a DSLR camera can produce." To meet the high burst rates needed to create a motion video from stills, he has used the Canon EOS 1D Mark III, the 1D Mark IV and the Nikon D3s.

While the choice of cameras was fairly obvious, Hughes needed to find a flash system that could keep up with the DSLRs' nine to ten frames per second burst rate and has been using Broncolor's Scoro A4S—"an incredibly consistent and fast pack, capable of keeping up with high speed photography." He tested the Scoro and Profoto Air systems and Hughes feels they are both usable for the process. He found that Scoro held up well for the amount of pops on the pack, delivered consistent color temperature and "didn't miss a single pop shooting at 10fps." Additionally, the Scoro allowed Hughes to fire off multiple pops in a single frame.

For RGB Move, a motion project originally commissioned for the Vancouver 2010 Olympics that "celebrated the human body in motion," Hughes collaborated with Krump dancer Amadeus Marquez to "capture the energy of [Marquez's] dance form in a unique way." The images were shot with the Canon EOS 1D Mark III (the Mark IV hadn't been released at that time), a single Scoro pack against a white backdrop with two umbrellas side-by-side for a basic, clean esthetic.

Always in motion during the shoot, Hughes used a wide-angle lens set at f/16, so focusing was not a real issue. In the end, he had shot 18,000 JPEG images (with multiple exposures, that translated to 25,000 pops on the Scoro) and used 3,000 images for the final piece. Although post-production on RGB Move was challenging—his Mac Pro hadn't arrived yet so he imported, sorted and assembled the video on a MacBook Pro (which he doesn't recommend) using Photo Mechanic, QuickTime, Lightroom and Final Cut Pro for all of the editing.

All the work and testing done with RGB Move (and a new Mac Pro) made it easier for Hughes to shoot and produce another motion project, "Ballet," which he shot with a 1D Mark IV and four Scoro packs. Four packs was "kind of overkill," said Hughes but "we wanted to light a much bigger space and have our subjects move in a larger space."

Even though Hughes considered hiring a steadicam operator for "Ballet," he wanted to shoot the project himself. Preferring a simple, work-with-the-tools-you have, hands-on approach, Hughes rigged the 1D Mark IV with a Magic Arm and a Canon G11, using the latter's adjustable LCD as a "viewfinder"—a much better option to a larger monitor.

When we spoke with Hughes, he was in post-production on a hybrid photo-motion series called "The 360 Projects." He used 48 Nikon D700s assembled in a circle to capture 360-degree photograph rota-



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tions of ballerinas and Krump dancers, creating “a single moment shown from 48 different angles.” But he probably won’t stop at creating a traditional time-based edit with these images as he did with RGB Move and Ballet. Maybe he’ll also present the project as a rotating 360-degree image online or, perhaps, create an interactive version for the iPad.

To find out what Hughes is up to next, and to view his work, as well as behind-the-scenes videos, go to: www.ryanennhughes.com.

RICHARD PATTERSON: (NON) STOP MOTION

Like Hughes, Patterson combines his skills as a still photographer and filmmaker to create motion videos. He has 12 years experience as a commercial and advertising photographer and his first feature film, “Hecho a Mano” was screened at the Miami Short Film Festival in November. For his music video project, “Sinners” by Hypernova, both skill sets proved critical.

Pointing out that a still photographer is “solo,” but “when dealing with film, it’s really a collaborative effort,” Patterson brought together a crew of about 25. “Sinners” was a labor of love for the crew, which consisted of both still photographers and film people, all intrigued by the idea of creating a motion video from stills.

Although trained as a steadycam operator himself, Patterson felt that Michael Fuchs, a steadycam operator who comes from the film world, was a better choice for this project. And, as director of photography, Patterson had more than enough to keep busy, even after he had scouted locations, met with the band, drew up storyboards, etc., etc.

Considering the size of the location (a large, old warehouse), Patterson knew from his still photography experience that high-speed strobes were the right choice. “I wanted to do the video with flash because that’s how I knew I could get it done the quickest” and that strobes would allow him to more easily and efficiently light the dark, spacious warehouse interior.

Above: Richard Patterson and his crew shot a total of 16,000 images—with 15,000 captured in one 20-hour day—to produce a stop-motion music video for the band Hypernova.

A long-time Profoto user, Patterson knew the packs had the speed, stamina and constant color temperature to work with his concept, so he used ten Profoto Pro-8 Air 2400 WS packs in combination with an assortment of lights, light modifiers, and reflectors. Shooting at ISO 100 and 1/200th second shutter speed, “We didn’t have to worry about pushing the packs to the maximum because the camera

[Canon EOS 1D Mark III] limited us to 10fps.”

Though the packs weren’t light, they were small and maneuverable—a good thing since they had about 5 packs on the roof and two off to the side for key lights. Using a transmitter for the Profoto Pro-8 Airs, Patterson could dial the power up and down individually, without having to scramble to where the packs were located (especially the ones on the roof).

Images were captured with the Canon EOS 1D Mark III and several different lenses, primarily the 16-35mm, 24-70mm and the 70-200mm. The camera was mounted on a Red Rock Micro DSLR Camera Support and PRO Steadicam Rig, with a small DV camera functioning as a monitor so steadycam operator Fuchs could more easily see where he was shooting. A BarTech Focus device was also utilized, with Fuchs’ first assistant controlling the focus wirelessly—a task and talent that comes from the film world—so that Fuchs could concentrate on moving the camera and composing shots.

They shot a total of 16,000 images—with 15,000 captured in a single 20-hour day. The Profoto Pro-8 Airs never gave up, even with those heavy demands and Patterson and crew were able to move into post-production.

Check out the completed work at www.richardpattersonimages.com, along with a behind-the-scenes video that shows just how much work, and talent, went into the production. Hypernova wanted a music video that was more theatrical and moody than a performance piece and Patterson and crew delivered. **pdn**