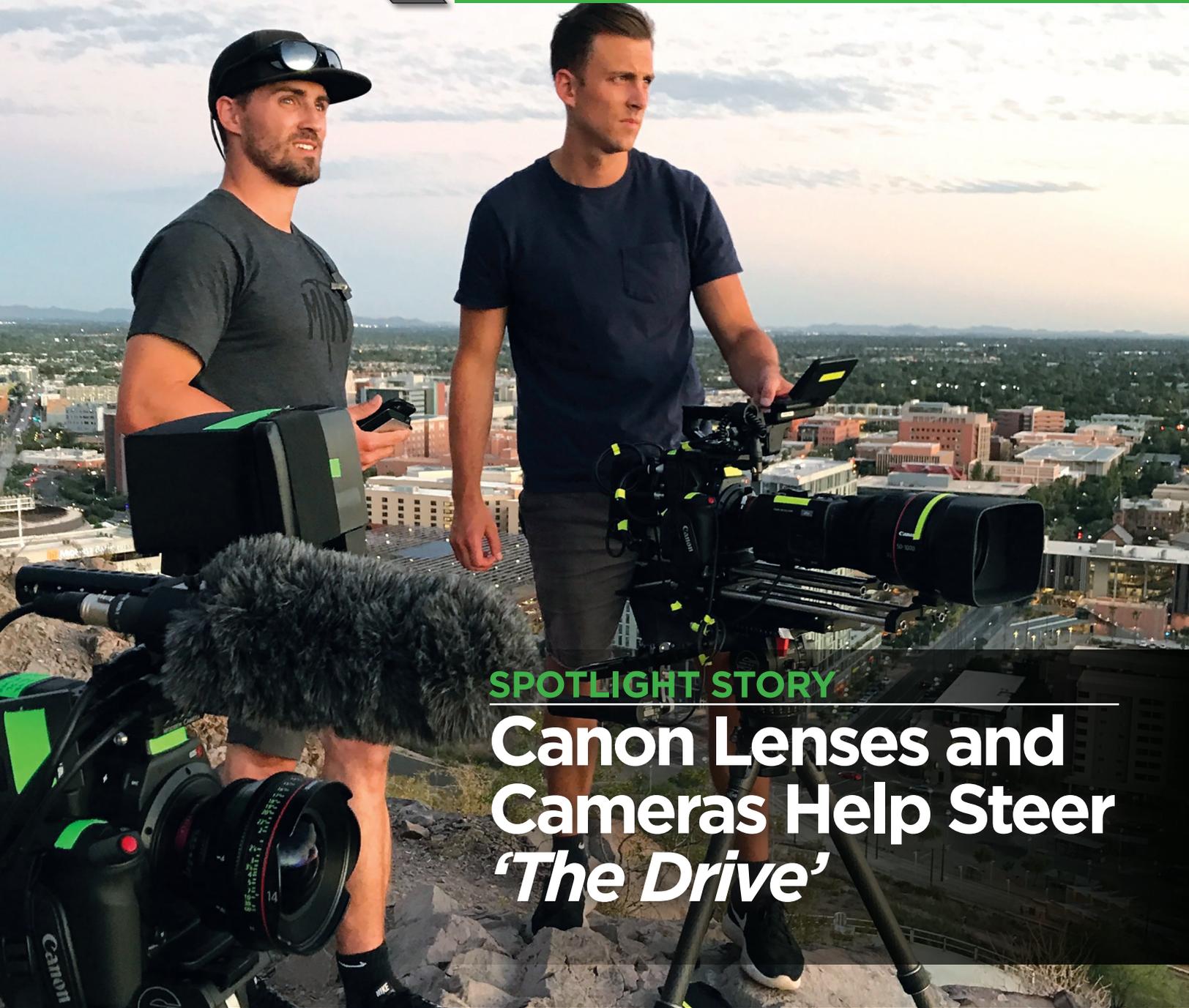


PROFILES

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SPOTLIGHT STORY

Canon Lenses and
Cameras Help Steer
'The Drive'

Canon

Director Taylor Kavanaugh running a Canon EOS C300 Mark II on a gimbal for some action shots during a practice at Washington State University.

PHOTO: Andrew Sakai - Blue Ox Films



CANON LENSES AND CAMERAS HELP STEER *'THE DRIVE'*

**// SERVO-POWERED CINEMA LENSES PROVE VITAL TO CAPTURING THE DRAMA
BEHIND COLLEGE FOOTBALL**

The drama, action, and passion of sports have long been drivers of innovations in broadcast television. Going a step further to tell the tales of the coaches and players behind the games requires a similarly innovative approach. The Pac-12 Network's series *The Drive* has sought to chronicle the on- and off-field stories of the 12 college football teams that make up The Pac-12 Conference. For Matt Wilcox and Taylor Kavanaugh of Blue Ox Films, the production team behind *The Drive*, the project is close to home, as Kavanaugh played Pac-12 football. When developing the concept of this behind-the-scenes peek at the intense world of big-time college football, they decided on the cinematic look and mobility of Canon's EOS C300 Mark II Cinema Cameras, along with a broad assortment of Canon Cinema Lenses.

The frenetic shooting schedule of *The Drive* matches the fast pace of the season. Structured as a 12-part documentary series, it follows each of the 12 football teams in the conference both on and off the field, giving fans a true inside look at football in The Pac-12 Conference. The show is shot, edited and aired in near real-time, which means there is the ever present dichotomy of efficiency and production value that The Pac-12 Network & Blue Ox are asked to walk the line between. Mike Tolajian, co-director of *The Drive* and Senior Coordinating Producer for The Pac-12 Network, worked with each football program to outline an aggressive production schedule in which the entire 12 episodes would be shot in nearly 12 weeks. Post production and editing for each episode was done at The Pac-12 Network studios by staff editors

Rich Allard and Steve Kundrat. In order to execute the production feat, Blue Ox utilized a 40-foot tour bus for nearly all travel throughout the conference, traversing nearly 15,000 miles via highway, to 12 cities, shooting 12 episodes, in 12 weeks.

Shooting *The Drive* has been a collaborative endeavor between The Pac-12 Network and Blue Ox Films, borne from previous successful projects. “We are extremely grateful for a true creative partnership with Mike Tolajian and The Pac-12 Network. We feel fortunate to have been able to grow with them and to continue to help tell the Network’s stories cinematically” recalled Kavanaugh. “We initially connected with The Pac-12 Network production team because Matt and I had created a non-profit documentary about a group of Pac-12 student-athletes doing service work in developing countries. The Pac-12 Network was interested in this content and from there we started shooting a variety of feature stories for them, which then grew into the opportunity to shoot and direct their flagship show, *The Drive*. The 2017 football season was our second season shooting the show, and it has continued to grow in both its ratings and production value.”



As the premiere show on the network, expectations for the production quality were high. “We demanded the very best equipment, and there were very specific parameters we had when it came to gear,” explained Kavanaugh. “We essentially distilled those parameters down into two items: image quality and mobility. In terms of image quality, we needed a camera/lens package that could achieve a variety of framings. Additionally, we really needed camera specs that supported episodic sports production. Things like full timecode support, slow/quick motion capabilities, Log shooting, etc. were all ‘must haves’ for us. But with all this said, we also had to consider the fact that we were traveling over 1,000 miles by

“We’ve been shooting on Canon our entire careers in filmmaking, and have continued to build trust in the brand and products.” // Taylor Kavanaugh, *Blue Ox Films*



TOP Camera Operator Ilja Maran shoots the C300 Mark II and 70-200 Compact Servo from the TV platform at University Of Washington. **PHOTO** Courtesy Blue Ox Films Blue Ox Films.
BOTTOM Taylor Kavanaugh shoots an interior scene on the C300 Mark II and 50-1000 at Washington State University. **PHOTO** Courtesy Andrew Sakai - Blue Ox Films Blue Ox Films.

bus each week. All of the gear needed to be packed up in no more than 6 cases. Nothing that wasn't absolutely necessary made the pack list."

// SERVO POWERED PRODUCTION //

In order to satisfy their need for quality and versatility in their lensing options, The Pac-12 Network and Blue Ox selected an array of Canon lenses that included the CINE-SERVO 50-1000mm, CINE-SERVO 17-120mm, COMPACT-SERVO 18-80mm, COMPACT-SERVO 70-200mm, and CN-E30-

**"The 50-1000 was a game-changer for us, it allowed us to capture shots that we wouldn't otherwise be able to get close to." // Taylor Kavanaugh,
*Blue Ox Films***

300mm. "We've been shooting on Canon our entire careers in filmmaking, and have continued to build trust in the brand and products," Kavanaugh noted. "Given the unique rigors and pace of the show, the lenses performed incredibly well. The zooms were incredible, and each had its own purpose and strength."

A common thread among many of the lenses used on *The Drive* is that they come standard with a servo unit to provide mechanical control of the lens. This was a conscientious choice by the production to keep up with the pace of the action. "We really utilize the servo functionality on these lenses, which is common when shooting sports," Kavanaugh remarked. "Shooting football is unique and challenging because of the physical distances the players can be from the camera, as well as the insane pace at which it moves. There are times when a subject may be a full 100 yards from the camera and within a few seconds be within 10 feet of us, and we're required to capture that span with razor sharp focus. These unique scenarios required us to demand the right lensing tools, and the servo drives that came standard on the Canon lenses were absolutely critical."

Each of the lenses had its respective strengths and stood out in its own way for Blue Ox. "The 50-1000 was a game-changer for us," Kavanaugh recalled. "It allowed us to capture shots that we wouldn't otherwise be able to get close to.





There's no other cinema lens on the market that can do what it can. Its servo function was a huge asset, and surprisingly, the lens wasn't as large or heavy as our team was expecting. We knew the 30-300 would be razor sharp, durable, and produce an extremely cinematic image, and there were no surprises there. The 30-300's image quality, speed, and toughness are unparalleled. For those reasons, we always leaned on it in a variety of environments. On a typical day, when shooting interviews, action, interiors, and exteriors, we would keep it on the camera all day. We cannot say enough about the reliability of this lens. The 17-120 is a do-it-all lens for interviews and off-field scenes. But it was the COMPACT-SERVO lenses that were the massive star of this production. The image quality, mobility, weight and functionality of the 18-80 and 70-200 were truly astounding. I honestly didn't expect these lenses to hold up, but we learned otherwise. These COMPACT-SERVO lenses will absolutely be in our kit on the next production. As an additional note, they were incredible tools when running the C300 Mark II on gimbal setups. Because they were so lightweight, they were of massive value in these scenarios."

// SMALL AND STURDY WINS THE RACE //

Additionally, the EOS C300 Mark II cinema camera was an integral part of the production plan. Having worked with the camera before, Kavanaugh knew what to expect, and got the great image quality and reliability he's counted on in the past. "We expected the very best, and that is what we got; I was never surprised," he declared. "We take extreme pride in the cinematic quality of the images that we produce for The Pac-12 Network. Thus, the benefits of large sensor cameras lie in the image quality and cinematic depth of field for us. There is so much emotion, pace and visceral detail to be captured in sports. It really is everything. Large sensor cameras are a necessity in capturing this. The image quality we got out of our C300 Mark II cameras was pristine in nearly all situations. It was an all-star workhorse. There is literally nothing that camera cannot do in the doc-style environment. Its image and sensor are spectacular, its buttons and toggles are perfect for run and gun, and its size is very manageable. The C300 Mark II is also extremely efficient with battery life, which was a huge asset to us."

TOP Taylor Kavanaugh captures the excitement of the team run-out just moments before a game at University of Colorado. **PHOTO** courtesy Andrew Sakai, Blue Ox Films.

CENTER LEFT Two of the workhorse camera packages during a timeout at the University of Washington. Two C300 Mark II bodies, with a 30-300mm and 17-120mm. **PHOTO** courtesy Taylor Kavanaugh, Blue Ox Films.

CENTER RIGHT Co-Directors Taylor Kavanaugh & Michael Tolajian, along with editor Steve Kundrat on set during the Stanford episode of the show filmed in Sydney Australia. **PHOTO** courtesy Michael Tolajian, Pac-12 Networks.

BOTTOM Taylor Kavanaugh films on the sideline of a close game at Washington State University with the C300 Mark II and 17-120 Cine-Servo.



ABOVE/RIGHT

In order to achieve their desired mobility, all of the gear for filming "The Drive" needed to be packed up in no more than 6 cases. Nothing that wasn't absolutely necessary made the pack list.

BOTTOM Director Taylor Kavanaugh and Production Manager Andrew Sakai, of Blue Ox Films, on set during the episode shot at University of Colorado.



The rough-and-tumble nature of football, combined with the constant travel schedule, meant that durability and mobility were huge factors with both cameras and lenses. "Mobility was of critical importance for our production," said Kavanaugh. "We were traveling thousands of miles each week with this gear, so the cameras and lenses had to travel well. On set, we were constantly on the move - in huddles, locker rooms, apartments, football fields, etc. We were literally always running from one place to the next. The weight, mobility and durability of our

"The style of shooting required on this show really is a true run-and-gun style. Canon supports that style of shooting with its durability, size, battery life and quality of products." //

Taylor Kavanaugh,
Blue Ox Films

package were of the utmost importance. The style of shooting required on this show really is a true run-and-gun style. Canon supports that style of shooting with its durability, size, battery life and quality of products. It's comforting to know that there are not any sacrifices in image quality, even with the fantastic mobility."

While the project didn't have any major equipment maintenance issues, Blue Ox Films and The Pac-12 Network was nevertheless impressed by the service and support they received from Canon. The dedication they saw from the team has reaffirmed their commitment to staying with Canon on future projects. "The Canon staff was extremely helpful," Kavanaugh concluded. "They informed us about the COMPACT-SERVO 18-80 and 70-200 lens capabilities at the beginning of the project, which turned out to be super helpful, as we were otherwise unfamiliar with this lens category. Overall, the pride in the products, attention to detail, and service from Canon is top notch. I speak for Blue Ox's camera department, Mike Tolajian and the rest of The Pac-12 Network, in that we feel very fortunate to be using Canon products." //





Why the World's Longest 4K Zoom Deserves Its Engineering Emmy and Your Attention

October 25, 2017 // No Film School // **BY LAURETTA PREVOST**

// A BRIEF HISTORY AND APPRECIATION OF CANON'S CINE ZOOMS.

A number of years back, Canon changed indie filmmaking with DSLR cameras, offering shallow depth of field and high ISOs at a wildly lower price point than competitors. Canon's entry into cinema was initially a bit of an aside to their long still camera history, as filmmakers took DSLR Canon 5Ds and made them work for moving imagery despite the lack of optimization for filmmaking. Indie filmmakers used photography lenses to achieve that shallow depth of field, so sought after in cinema, and accepted the setbacks: the lenses didn't quite hold focus when they zoomed, there was a bit of "breathing" which could be seen during the zooming,

and the throw of the focal ring was quite small, making precision focusing and changing focus during a shot a bit risky, as the lenses were designed for still use.

Canon recognized its customers' increasing demands as the DSLR cinema revolution took off, and soon the company began designing cinema lenses to meet the industry's needs. As a result of several lens innovations, the Academy of Television Arts & Sciences will recognize Canon today at the 69th Annual Technology & Engineering Emmy Awards for its entire line of Cine Zooms: Canon's CN-E, CINE-SERVO and COMPACT-SERVO lines, including the



ABOVE Canon zooms were designed to be light weight and portable for rugged conditions, such as on the National Geographic 'Earth Live' shoot.
PHOTO courtesy Al Berman.

world's longest 4K ultra-telephoto zoom lens, the CINE-SERVO 50-1000mm T5.0-8.9. The Technology & Engineering Emmy Awards honor innovation and development in broadcast technology.

Since its entry into cinema about six years ago, Canon has adapted its knowledge and gear for the moving image. The C-line of cameras (C100, C300, C500, C700) takes the benefits of DSLRs and presents them in a set-friendly body. Likewise, Canon released 4K production zoom lenses which hold focus throughout the zoom range, and offer minimal breathing and a longer throw of the focus ring on quality glass.

These lenses, with their powerful zooming capability, are finding their way onto wildlife sets, and they are also being used on a number of narrative shows, including *Homeland*, *Law & Order: Menendez Trial*, *30 for 30*, *Black Love*, *The Defiant Ones*, and *True Blood*.

// THE EMMY AWARD RECIPIENTS ARE: //

Two Super 35mm zoom lenses, most often used for high-end motion pictures:

- CN-E 14.5-60mm T2.6
- CN-E 30-300mm T2.95-3.7

Two Super 35 Compact Zooms, most often used for handheld or Steadicam-type shooting:

- CN-E 15.5-47mm T2.8
- CN-E 30-105mm T2.8

Two Super 35 Cine-Servo Zoom Lenses, most often

used for television shooters who wanted servo control:

- CN-E 17-120mm T2.95-3.9
- CN-E 50-1000mm T5-8.9

National Geographic's *Earth Live*, executive produced by Al Berman, used 59 cameras in 25 locations on six continents, to create the world's biggest live show to date. Berman raves about the Canon 50-1000mm. "I've never experienced a lens that's better for wildlife. The reach is unprecedented, the ease of use is great, and the images are stunning."

Larry Thorpe, Canon USA's Senior Fellow of Professional Engineering & Solutions, knows the reach of the 50-1000mm is responding to a need. Canon

“My style is having background blur and things out of focus. With this zoom, I can back up really far and do a medium wide shot, so when the actors are in focus, the background is blurry and buttery like on a feature film.” //
Jon Joffin, ASC

consulted with end users to tailor lenses to what natural history and wildlife shooters were looking for. "Wildlife folks had issues with the zoom range not being long enough for their sort of work," Thorpe shares. "They wanted to be 350 feet away from a subject on a Super 35mm full frame image sensor and be able to have a four- or five-foot high subject fill the frame." As shooting conditions of wildlife videography often require remote locations, difficult terrain, and tighter crews, an additional consideration was the weight and size of the lens: Canon wanted to make a lens that weighed 15 pounds or less and was no longer than 16 inches. As of 2014, with the 50-1000mm, they met those goals and created the

world's longest 4K ultra-telephoto zoom lens. (Add an extender, and that range increases to 1500mm).

Producer Berman reflected on how this kind of technology enables a different way of capturing animals in nature: when the humans and the gear can be at a distance, they are less likely to disrupt the wildlife or influence the hunt. For *Earth Live* in Ethiopia, the 50-1000mm lens was used with Canon's ME20F-SH Multi-Purpose Camera to film hyenas, and in Alaska, the lens was sent up in a plane to track humpback whales. At 4K resolution from the air, a whale's body could fill the frame.

Alex Sax, a Pro Market Specialist based in Burbank, California, works directly with cinematographers and directors, discussing needs and making recommendations. He finds large events, such as huge congregations or event halls, benefit from coverage with the ultra telephoto lens' reach. He sees more run-and-gun nature work often opting for Canon's compact zooms, the 15.5-47mm t2.8 and the 30-105mm t2.8, both of which can maintain their 2.8 apertures as well as their focus throughout their range.

Jon Joffin, ASC, is a narrative feature film and television cinematographer. He has shot several television series using Canon cinema zooms. He tends to shoot mostly on a set of primes, and finds that a cine zoom cuts well with his Canon Cinema primes and Leica primes. "I use the 30-300 often—I love that lens," Joffin says. "We'll often put it on a remote head on a crane. Or I'll use it on B camera. I used to use Angeniux zooms and having the extra reach available with the Canon 30-300 is fantastic." *Aftermath* with Anne Heche was one show on which Joffin found himself frequently turning to Canon zooms. Joffin points out that with the popular Alexa Mini camera, the turning of a mere four screws changes the lens mount, and his camera assistants could swap mounts in 90 seconds.

Most prime lens sets often only go to a 135mm or a 180mm, and Joffin likes making use of the extra reach provided by the cine zooms. "My style is having background blur and things out of focus. With this zoom, I can back up really far and do a medium wide shot, so when the actors are in focus, the background



ABOVE National Geographic's *Earth Live* broadcast live images of wildlife at night, in color, without the use of artificial lighting.

PHOTO courtesy Al Berman.



ABOVE Canon CINE-SERVO 50-1000mm T5.0-8.9

is blurry and buttery like on a feature film."

The Emmy award acknowledges the engineering developments that affect the broadcast television industry, and in recent years cinema lenses have been increasingly adapted for broadcast TV. The Canon SERVO zooms offer motorized zooming as well as remote control of iris and focus, so they appeal to broadcast shooters who often want full mobile control. From an engineering perspective, the lenses also offer minimal focus breathing as Canon worked to maintain a high level of 4K-quality resolution across the image.

The Technology & Engineering Emmy Awards were presented on October 25, 2017, during the SMPTE 2017 Annual Conference in Hollywood, CA. //



STEPHEN GOLDBLATT ASC BSC ON *OUR SOULS AT NIGHT*

December 2017 // *Film and Digital Times* // BY JON FAUER

Q // Jon Fauer

Please tell us about your latest project.

A // Stephen Goldblatt

Our Souls at Night is a feature film starring Robert Redford and Jane Fonda. I've been an advisor at Sundance off and on for over 20 years. In that time, I got to know Bob quite well. When he bought the rights to "*Our Souls at Night*," he asked Ritesh Batra to be the director and then he asked him to meet me. I did. We got along well. Jane Fonda was a big part of the mix, too. And so, I had to undergo that sort of scrutiny. I did test s with her and she liked them, so we all started to make this movie in Colorado. It had a very small budget, actually \$15 million or so, but it

was adequate. We couldn't be extravagant. We had to plan very carefully. I enjoy that. It's like a puzzle that has results.

I was able to assemble a wonderful crew: Steve Mathis as gaffer and my old pal, Charlie Saldana as key grip. Since we knew that money was very tight, we got hold of a Titan Crane. There are quite a few of them in the United States and there's little demand because most people are now using remote heads. Basically, Chapman will station it with you and then when you need to do crane work, they fly in the crane operator. We just needed something that would take us up, down, left, and right and that classic crane is very useful. The story doesn't call for anything flashy. It's pretty classic and there are many intimate



TOP Stephen Goldblatt.

MIDDLE Chapman Titan Crane.

BOTTOM Canon C300 Mark II and Angenieux 15-40 suspended inside truck with LightGear panels.

conversations between Fonda and Redford in bed at night with the lights off.

Q // Jon Fauer

How did you shoot Night-Interior-Bed-No Lights ?

A // Stephen Goldblatt

With great care. It's a trick that you have to play so it looks dark enough to be convincing but still be able to see eyes and expressions. That engaged me. Thank heavens production agreed that we could shoot on a

real set. Most the film worked on location, but that set was vital. As I was required to use a 4K camera, we had a Sony F55 and a Canon C300 Mark II. The Canon camera was selected for its great performance in low light and small size, which was important for scenes in moving vehicles and at night.

A vital part of the process, as I find to my joy, is the digital intermediate because we could darken the edges of the frame and do all the lovely tricks to make the image more convincing when you're pretending it's absolute darkness, but of course it's not. I worked with Steve Scott at Technicolor Hollywood. Then there were new and improved post-production problems involving high dynamic range, which is a completely separate involvement with the DI. And that made me jumpy because in theory it's a completely different look.

Q // Changing the look and intent of your film...

A // Stephen Goldblatt

I don't like the idea that a company can add another layer of visual manipulation without necessarily the director of photography brought in, but I was fortunate in this case; they were very happy to have me involved. I can't say that I am sold on HDR one bit.

Q // Let's get to that later. What lenses did you have?

A // Stephen Goldblatt

We got all the equipment from Panavision. We had a set of Ultra Speeds: 14, 17, 20, 24, 28, 35, 40, 50, 75, 100, and 150 mm. Also, we had a 24-275 mm T2.8 and 17.5-75 mm T2.3 Primo Zoom. Ritesh initially wanted to shoot in 2.39:1 spherical aspect ratio but Netflix put their foot down. They said it had to be 16:9. I didn't mind. I thought for the subject matter, 16:9 would be perfect and Ritesh got used to it within minutes. On the Canon C300, we had an Angenieux Optimo 15-40 for its light weight and versatility.

Q // And lighting?

A // Stephen Goldblatt

Another technical enjoyment was using LEDs, really good LEDs, nothing green, nothing funny and they were wonderful. Steve Mathis was able to



get prototype LED blankets and LED fixtures from LiteGear and we just about went all LED except some high backlights on streets for night work. On set, the LEDs kept everything very cool and comfortable. You could set up an LED blanket which was about 10 feet long by 5 feet high and it generated zero heat. When you think about those big soft lights which are so hot that you put them way back and let the light drift in, this gave us the same effect and it drew far less power.

Q // Where was the studio?

A // We were based out in Colorado Springs. The story is Colorado based. We built the sets in a warehouse. We had a production office and I had a screening room built there. I had on-set DIT and dailies timing.

Q // How did you match the different Sony and Canon cameras?

A // I experimented on set and on location with various camera looks and although I found it interesting, in the end, I didn't find it necessary. I was very happy with the way everything matched without any fuss. What I wasn't doing, though, was using the Canon simultaneously with the Sony.

Q // How would you describe the look? I assume you did some research in the beginning?

A // I looked at a lot of stills in black-and-white, but that was more for moods with Ritesh. We weren't in any sense pushed to glamorize the actors. And so, his mantra really was to be humble, to be ordinary, because this is a story about ordinary people. They're not doing anything extraordinary in the story. They're not doing anything that is not grounded in reality. And that was very important to him and me. It would be very wrong to have glamorized them. Having said that, it's difficult not to have some kind of glamor with Jane Fonda, because she just...that's her. She's a very attractive woman. I was trying to be kind to her and to Bob in my lighting and then let the film express itself. I think I did that.

Q // How did you rate the cameras for exposures?

A // I rated the Canon C300 Mark II at its recommended 800 ISO spec. The Sony F55, I gave about a half stop more exposure (ISO 1250 - ½ stop = around 800). My DIT on-set was Abby Levine out of New York. I've worked with him a few times and he was great.

Q // As Tony Richmond says, "Nepotism is fine as long as you keep it in the family."

A // So Henry Tirl was our camera operator and Dennis Seawright our first AC.

Q // How did you afford such good people on a limited budget film?

A // Fortunately, Ben Ormand the producer understands that expensive top people are worth their weight in gold because you don't have to reshoot anything.

Q // Please explain again why you used two different cameras?

A // We were using the Canon C300 camera for some significant sequences in a truck and I wanted the camera to be small and mobile. Henry was handholding the camera and he could move it left and right the entire width of the truck to get nice angles as we were shooting. The other important thing inside the truck was that we used LED panels, above, to the left, to the right and we could just

tape them up and these panels were all run off of batteries. They did not need to tow the car with a truck and a generator. Bob is a very good driver and he was very happy to act and drive. There wasn't much traffic going on outside and using the LEDs, I could balance the interior to the exterior visually. I was sitting in the back huddled down with my own monitor and I had remote sliders. So, in the car, I could change the illumination. I could change the direction of the light by fading from a right-hand light panel to a left-hand or top with different feels and looks. I could also change the color temperature of the light interactively with what was going on outside.

Q // These were driving shots at night?

A // Night and day. It was amazing seeing the daytime scenes. You could get the level right, immediately. Sometimes the level outside was T16-T22 and I could easily balance interior with exterior and without using NDs, without using big lamps, and without using a generator: just with LED panels on battery packs. Normally, you'd call an actor three or four hours after your crew call because it takes so long to get everything rigged for car shots. Here, our call was 8:30 and we were ready to shoot at 9:30 which, for the cast, was unheard of. My lifelong horror has been shooting in cars. It sort of subsided on this show.

Q // Speaking of drama, when you were in production, did you know that there would be an HDR release?

A // I think that's standard for Netflix, and I knew. They gave me every access and allowed me to do exactly what I wanted to do with the HDR pass and there was nobody saying you can't do this, you can't do that, you must do this.

Q // In the future, would you consider having an HDR monitor on set so you can see what it would or could look like?

A // Not really. What I did with the HDR pass was actually to make it look like the film I made and that Ritesh had seen. We didn't do anything extreme. To be honest, the most dramatic HDR improvement I've seen is not available to mere mortals but it's in HDR projection.

That is unbelievably great. But as of yet, it's not available easily. It's for big-time mortal star premieres.



ABOVE Stephen Goldblatt and Jane Fonda.

There is that temptation in doing HDR or not doing HDR. I've been using it in still photography for over a decade. Generally, it's very rare that I'll do more than just bring the dynamic range back to where I preferred it in the first place. It's like being a musician. Just because you have all those notes, doesn't mean you have to play them all. In fact, it's where you place your exposures. It's where you decide on what you're trying to express visually. Just because you've got 20 stops of dynamic range in theory doesn't mean you must use them all.

Q // So your biggest worry is HDR in post, after the fact, when the cinematographer is not there. Then it's something that may look totally different.

A // Yes. This is a big deal with any company. If they wished to make their own pass, basically, they are preempting the authority of both of the director and the cinematographer. You know, Netflix doesn't want to do that, nor does Amazon. So far they seem to have a benevolent attitude.

Q // Did you use diffusion or filters?

A // It's a question people have been asking me, "Did you use any filters with Jane Fonda?" No, I did not. I had a whole case of them on the camera truck. But I never used them. I had a look at one or two and then I put them away. I was just very careful in lighting her for who she is, what she was doing. I wasn't trying to glamorize her, as I said. Her performance is wonderful and I wanted my work to only tell that and the same with Redford. I didn't bring up special tricks but I did keep a very good lookout for both of these actors. Oh, and we didn't do a single cosmetic fix of anything in post. //



TO THE ENDS OF THE EARTH WITH CANON

// WEATHERING THE EXTREMES OF GLOBAL TEMPERATURES FOR THE DOCUMENTARY *ICE ON FIRE*

As a cinematographer specializing in time lapse videos, Harun Mehmedinovic is used to speeding up the natural occurrence of events. For the upcoming documentary *Ice on Fire*, Mehmedinovic is dealing with a subject that is itself a speeding up of the natural occurrence of events—climate change. The third in a trilogy of documentary films, *Ice on Fire* focuses on the impact of methane on global warming, and the emerging technologies that aim to sequester carbon out of the atmosphere and reverse the warming trajectory of the planet. In order to capture 4K shots in challenging environments across the globe, Mehmedinovic chose an array of Canon EOS and Cinema EOS cameras, as well as Canon Cinema Prime and EF lenses.

“On my previous project, I spent four years and 150,000 miles capturing the night sky across all of North America, primarily through long exposure stills

and time lapse,” Mehmedinovic explained. “During that project I worked with multiple cameras in the EOS 5D Series, and that experience made me want to stick with Canon DSLR cameras. I also tested an EOS C300 Mark II and an EOS C200 for interviews and B-roll video. The 4K performance combined with quick setup time made choosing Canon an easy decision on my part.”

// ADAPTING TO EXTREMES //

Much of *Ice on Fire* was shot in challenging weather conditions, with temperatures ranging from minus 25 degrees Fahrenheit in the arctic to over 110 degrees near the equator. Due to the extreme temperature changes and lack of support infrastructure in the wilderness, durability was a tremendous factor for the project. “We took precautions to keep the batteries and lenses warm while shooting in extreme



cold and we did not run into any major issues,” recalled Mehmedinovic. “I was particularly impressed with C300 Mark II’s performance in extreme cold. Much of my work involves shooting in nature and in tough conditions. Cameras and lenses have to be able to survive extreme temperature changes, unstable environments and be manageable to carry to locations inaccessible by car or other means.”

The versatility of the Canon cameras also played a large role in the project. With the EOS 5D Mark IV camera utilizing the same EF mount as the EOS C200 and C300 Mark II, Mehmedinovic was able to seamlessly swap lenses between all of his cameras, reducing setup time and creating increased efficiency.

“We purchased five 5D Mark IV cameras as the bulk of the film was to be time lapses, which were all shot in full resolution RAW and later processed in post,” he continued. “When we needed video on the fly, we used Canon LOG to capture that footage. This mobility was a crucial factor for us. Much of our shooting was about being ready to go on the spot, with virtually no setup time. We were also without a lot of camera assistance because of the isolated locations. We needed to have equipment that was versatile and easy to set up. Having the ability to interchange lenses between DSLRs and Cinema

“We took precautions to keep the batteries and lenses warm while shooting in extreme cold... I was particularly impressed with the Canon EOS C300 Mark II’s performance in extreme cold.”

// Harun Mehmedinovic

Cameras helped us to conserve space and weight in difficult shooting locations where we had to make tough choices on what we could bring. Being able to bring a limited amount of lenses that we could use on any camera we had was critical.”

// SEAMLESS INTEGRATION //

Shooting with three different camera models can be a challenge, especially in 4K. The difficulties of matching footage from the various cameras can cause issues in postproduction. Mehmedinovic knew what to expect from the output based on his previous experience with the EOS 5D Mark IV, and was impressed with how seamlessly it matched with the two Cinema EOS cameras.



ABOVE In order to capture 4K shots in challenging environments across the globe, Mehmedinovic chose an array of Canon EOS and Cinema EOS cameras, as well as Canon Cinema Prime and EF lenses.

// CREATIVE CONTROL //

With many of the students learning on the cameras after only a few initial lectures from their professors, the need for remote camera control was critical. The Canon RC-V100 remote camera controls allow engineers in the control room to make adjustments to the camera settings remotely, to ensure that the final picture is pleasing. “What helped seal the decision the most was the RC-V100 remote,” agreed Wilson. “This gave us remote camera painting capability for each camera in the control room. The other manufacturers did not have a product that would integrate as easily with their camera.”

Integral in the remote controlling of the image are the four COMPACT-SERVO 18-80mm lenses. The servo drive which comes standard on the lenses allows the RC-V100 to manipulate the lens settings, which could not otherwise be done. “The servo feature is essential in our multi-camera configuration,” Wilson noted. “The 18-80mm lens was a reasonable choice in our budget, and the quality is impressive. We have been very pleased with the images, and the control we have over them.”

“I was particularly thrilled with the quality of the C300 Mark II, especially in high ISO - which was crucial for parts of the film, including shooting in the Arctic while the sun was not quite out during the day,” said Mehmedinovic. “Previously having worked with the EOS C500, I liked the improvements that had been made. I was also impressed with the RAW options on the EOS C200, which made it a perfect on-the-go B-roll camera. The ability to match the RAW footage from our 5D Mark IV cameras made the post process smoother later on.”

“The combination of the 5D Mark IV, C200 and C300 Mark II cameras, along with Cinema Prime and EF lenses, provided seamless transitions, great mobility and critical versatility. It’s a no-brainer to continue this route going forward on any documentary I work on.”

// Harun Mehmedinovic

The decision to use Canon cameras for Ice on Fire was one that Mehmedinovic plans to repeat in the future now that he has seen the benefits of the workflow. “For this project, we had enough budget available that we could have used any cameras we wanted,” he concluded. “I made the case to go with a package of Canon equipment and that’s the road the production house took. However, the Canon options we went with were fairly affordable, and as we have some upcoming projects lined up after this one is done, I will likely stick to a similar package of Canon equipment. The combination of the 5D Mark IV, C200 and C300 Mark II cameras, along with Cinema Prime and EF lenses, provided seamless transitions, great mobility and critical versatility. It’s a no-brainer to continue this route going forward on any documentary I work on.” //

'The Ritual': DP Andrew Shulkind and Composer Ben Lovett on Netflix's Intriguing New Horror Tale

February 5, 2018 // Sound & Picture // BY JENNIFER WALDEN

David Bruckner, known for his directorial contributions on horror films like *V/H/S* (2012) and *The Signal* (2007), presented his latest film *The Ritual* at the Toronto International Film Festival in September. It's his first film as the sole director. *The Ritual* — coming to Netflix on February 9th, follows a group of friends who go on a hiking trip in northern Sweden six months after the death of their mutual friend. They soon discover that the woods aren't as peaceful as they appear. In fact, the group is being stalked by a supernatural entity.

// CINEMATOGRAPHY //

Award-winning director of photography Andrew Shulkind, who worked with director Bruckner on *Southbound* (2015), was intrigued by the filming challenges he anticipated on *The Ritual*, in particular,

shooting in near-darkness and developing battery-powered lighting solutions that would read as realistic on screen. Here, Shulkind talks about shooting off the beaten track in the wilds of Romania, how they designed their lighting kits with limited power, and how he managed to get clean, low-light shots for the film.

Q // Sound & Picture

How would you describe the look of this film?

A // Andrew Shulkind

It's a movie that we approached as a drama as opposed to a horror film. It's scary and there are all of these classic horror elements, but the idea wasn't to approach it as a schlocky B-movie. The idea was to make it a subtle character drama. With most horror movies, there is some plot or subtext, but it's not the main element. This

film is different. It's really about a group of friends confronting how their relationship has changed as they became adults and what happens to the classic ideas of manhood once you're faced with a challenge.

To serve director Bruckner's vision and the humanity in his movies — which are all done with this level of detail and richness, we wanted a nuanced look and subtle tones for *The Ritual*. For me, it was about working in the shadow area of the sensor and being able to tell as nuanced a story visually as the director was telling thematically.

Q // How were you able to draw audiences into the experience of *The Ritual*?

A // Andrew Shulkind

The idea for the first two-thirds of the movie is that you don't see this creature. The movie becomes different five minutes in, and it becomes even more different 45 minutes in. The idea was to cue up those themes suggestively — this idea that they are being watched kind of puts you in the seat of this creature that is hunting them. They don't realize until the end of the movie that they are being hunted by a smarter creature. We wanted to tip that off early so that on repeat viewing you can see that it's actually a POV.

Q // What cameras and lenses did you choose? Why?

A // Andrew Shulkind

We made a very deliberate choice on this movie. I am very lucky to have early access to new camera and lighting products. I have worked quite a bit with Canon and their color science. I did a lot of low-light testing on a previous movie with their C300 Mark II, which we looked at next to Alexa and RED. We found that we were able to get an extra stop, or twice as much light, out of the C300 Mark II with no loss in quality or additional noise.

I used the C300 Mark II for my last movie and had no complaints. It was really seamless. So it was a natural choice when it came to this film, knowing that we were going to be shooting in very dark environments.

Many times you hear about how sensitive sensors are, it's meant to get you out of a jam when you don't have enough light or you're shooting a night exterior and you can't light the whole skyline and still expose all the twinkling lights in the background. Far from an accident, I wanted to use that advantage as a deliberate choice to service the story in those subtle ways that I was describing before.





We did also use the Alexa because we were shooting in Romania in extreme conditions. There is no panacea, and in some cases, we needed the robustness of the Alexa in really freezing environments. Also, much of the camera support that we had — Mini Libras, jibs, and a bunch of stabilizing equipment that we needed for some of the shots, we needed the weight of the Alexa Mini.

We also had access to the new Canon C700, which we needed for shooting high-speed stuff. That camera has all of the advantages of the C300 Mark II but allows you to shoot 120 frames per second at 4K. It was a prototype and was not commercially available at the time and we had some much-needed insider access to it.

Years ago, Canon did a test to prove what happens on their new sensor at night. The supposition was, “What if you’re trying to catch a sunset shot but you get there too late. Can you still get the shot?” They did a demonstration of this camera which can shoot at 105,000 ISO. How much of that can you use without any noise reduction? They were able to shoot up to 10,000 ASA without any appreciable noise, which was amazing.

In some of these night cases on *The Ritual*, we needed that. We were planning on using that creatively. But there was one shot where we needed to get light but we didn’t have it. It was a really cool scene where Luke [Rafe Spall] and Hutch [Robert James-Collier] are on this mountaintop and it’s dusk. I’ve always been excited about the twilight, when the sun is gone but there’s a glow in the sky, and there’s this blue ambience. I wanted to capture that and we needed coverage. We had six or seven things we needed to cover in that time and only an hour and a half to do it. The Canon totally saved us. We got beautiful images and you can see one of the characters smoking a cigarette and the lit end of the cigarette is lighting his face for a moment as he inhales.

The lenses were a very specific choice too. My friends at Vantage — a company in Germany that makes Hawk Anamorphics, has these amazing T1 lenses. They are extremely fast. Basically, they are the fastest commercially available lens. You can shoot at T1 (equivalent to around f0.95), which is extraordinary. To shoot at f1 on a lens and 3,200 ISO gave us the ability to shoot in near darkness. Not that we weren’t lighting it, but suddenly we could get all the softness from a balloon light into bounce cards into what material we had on the ground and start working with this softness that we all associate with night.

So often when you have ‘night’ in the movies, it feels like you can see the lights. You can see the artificial fixtures.



Q // What was the most challenging scene that you had to shoot on *The Ritual*?

A // Andrew Shulkind

This was a hard movie, no doubt about it. We shot on a mountain at 8,000-foot elevation, and it was freezing and raining. There were scenes where we had a surprise, freak snowstorm and so we had to broom snow off the trees so that it didn't ruin shots — and they were wide shots.

One of the challenges that got me excited about this movie in the first place was in the original script two characters are imprisoned in a place called the 'Black House,' — a dark, lightless room. I was excited about that challenge. How do you shoot two guys in the dark?

We came up with some solutions, which sometimes involved lantern light and sometimes it involved spill coming through cracks in the wall. In one of the scenes, a character begins to dig a hole in the mortar and we really played that to dramatic effect with the beam of light that comes through from the outside. Between access to super-fast sensors, super-fast lenses, and dimmable LED lights, it was possible to shoot at super low-light levels and get that nuance.

Q // What was the most complex scene to shoot in terms of movement?

A // The whole second act of this movie takes place on the side of a mountain. We didn't want to go handheld. We wanted to have a stabilized version of what a handheld would look like. I wanted to shoot with a Freefly MōVI with remote handwheels. I had done that successfully before. Having come up as an operator, I am really comfortable with wheels and I like the idea of being able to control movement that surgically while still being able to have someone carry the camera around and move it in dynamic ways. But they had only just come out and we were shooting in Europe and they were really hard to access outside of the US. So we ended up bringing in a Mini Libra, one of the best stabilized remote heads on the market. This was a piece of gear that I knew in its bigger form and it was easily accessible from South Africa. So we rigged that in a variety of different ways.

We were trying to find solutions to be able to frame in a stable way on the side of a mountain. We had an outstanding Steadicam operator, Bogdan Stanciu, but



at a certain point we were at a 30° pitch and it's pelting down hail and he's doing the seventh take going uphill for a long four-minute walk-and-talk. The challenge was finding ways of keeping the camera stable and covering scenes reliably at a steep incline, whether that meant Steadicam or another more advanced piece of gear.

Q // In terms of lighting, what was your most challenging scene?

A // Just before Luke and Dom [Sam Troughton] find the village, they have lost their flashlights and they are in the darkest part of the forest at night. We were hundreds of yards from level ground for a generator. Looking at the page, I was excited by those challenges. That is what drew me to this film and was one of the best challenges.

I relished figuring out how to make night not look artificial. It's difficult, especially when you're up against a moonless night. At one point, we discussed using the latitude of the location as a way to motivate a low sun, like it never gets dark. But then that makes it challenging to communicate the passage of time. I remember watching *Insomnia* (2002), the Christopher Nolan movie set in Alaska, and you never really knew where you were time-wise. It worked for that movie but would have been confusing for ours because it never would've been dark enough to hide the creature. With that option out, we lit it practically, which involved balloon lights and a lot of softness, a lot of blacking things out, and a lot of smoke.

I spent time strategizing with my gaffer on how to light up so much of the forest because this particular location was deep, dense woods. It was hard to access and an impractical cable run. We were in the forest and

not next to a road. We were a 30-minute hike into the woods. So part of our solution was using balloon lights on generators and other smaller sources. In the case where we weren't able to use the flashlight, I brought some Litegear light ribbon and had my electricians staple it to yardsticks. We used a lantern battery to power each yardstick locally and we positioned these off in the woods so that we wouldn't have to run cables. We had about ten of them. We could position them where we liked them and hit the dimmers to dim them down. We found that we needed so little exposure that we could just dim them down to 10% — just before they started to flicker, and we'd have enough exposure, with added smoke, to feel the dramatic depth of the forest.

Q // The practical side of shooting a half-hour hike into the woods must have been challenging. Did you drag a generator along with you?

A // We did some scouting and David [Bruckner] is a very ambitious director. He doesn't want to leave any stone unturned and so we were all over the forest. We would find these extraordinary locations that were really special. You'd think that walking around the forest everything would look the same, but we would find these amazing little groves even if it was a hike to get there. So when we did our tech scout, I'm thinking my gaffer Florin Ion is going to hate this. And sure enough, we'd all show up and Florin says, "I hate this."

So in some cases, we had to realize that yeah, that spot is just too far. Or, maybe we could access it from another road. Or, we can try to use battery-powered sources. In some cases, we had a balloon on a 100' construction crane and we were able to arm it over to reach inaccessible areas. We could get it to where we needed it distance-wise, and with the glancing angle and with some rain, it felt like it was where we needed.

Q // Can you tell me about your lighting plan for the village?

A // The group stumbles onto this weird forest cult in an old logging village. We built the entire village. The production designer Adrian Curelea brought these amazing beams from somewhere north in Romania and Hungary and constructed this detailed village over a few weeks. It's like five or six buildings made from these huge hewn logs. Given that we were fabricating the whole thing, we could strategize how to use the construction to find opportunities, lighting and

composition-wise.

In the 'Black House,' you have two guys shackled to the wall and David had a very clear sense of how he wanted to block it before we even built the building. So we built it to those specifications and we taped off the floor and used a lens on a viewfinder to estimate how we thought we'd frame it. We talked about having cracks in between the timbers because they are these huge hewn logs, but we had used that trick already earlier in the movie. We had built another abandoned building that the guys approach earlier in the film, and the idea in that house was to see through to the exterior in an eerie way. It's always scary to me being in a lit place looking out into the darkness because you can't see who's looking in. And so we had built these extra wide gaps in the planks for that house to see lightning flashes outside that would light up the whole place.

We didn't want to replicate that technique for the 'Black House.' So we decided to have Luke dig out the mortar, which is this sandy clay that isn't hardened, so he can get a vantage point. He digs out a little hole so he can see. Also, there is a window in the house because the room wasn't meant to be a prison. It's just this logging village. The characters are chained to the floor and they're never able to quite reach the window. But we positioned the window in a way that would allow this beautiful soft bounced light to come in and it spills around the beams of these hand-hewn logs. I used that as our main light source. It allowed the versatility to shoot day for day, day for night, and night for day. So there's a source of light coming from the mortar hole and the light that comes through the window, and you get a minimal exposure and we were able to really work some detail into the shadow toe of the curve.

Q // What scene or sequence are you most proud of in *The Ritual* and why? What went into that scene?

A // I'd have to say that scene in the 'Black House.' That scene was a great challenge. It was exciting to read and to figure out how we were going to shoot two guys imprisoned in the dark. There were construction choices, like how far are the planks, how big is the hole, how near is the window, how big is the window, and, by the way, all these measurements had to be in meters. All those challenges were there. We cued the fire — which Luke would use to burn the house down in the end, in some cases with flame bars and other times an electrical lighting effect. I was happy with how much

range that left us in the grade.

// FILM SCORE //

The Ritual may be a horror film on the outside, but it's really a film about tested friendship and changing relationships. Just as that concept is woven into the fabric of the story, that theme is also threaded musically throughout composer Ben Lovett's score. In the film, a group of friends reunites for a hiking trip following the death of their friend Robert, which was witnessed by a member of their group. Guilt and suspicion challenge their emotional ties while a supernatural force threatens their lives.

Lovett, an award-winning composer who worked with Bruckner on *The Signal*, says Robert's theme is fundamentally different from the orchestral-based direction of the rest of the score. Its synthetic quality stands in contrast to the acoustic instrumentation that's representative of the film's natural setting. Lovett's approach to the score wasn't merely based on what's presented on screen. It was also influenced by the setting in which he wrote the score. Here, he shares details about his approach and how the events of his life influenced the creation of *The Ritual's* soundtrack.

Q // How did you get involved in *The Ritual*?

A // Ben Lovett

The director [David Bruckner] and I go back a long way. He and I met in college and we came up together, cutting our teeth doing experimental indie films. It had been a decade since we worked together. We last collaborated on *The Signal*, which debuted at Sundance in 2007. David was one of three directors on that film. He and I had been looking for another opportunity to work together on a feature ever since then. Timing and circumstances aligned on *The Ritual* and created a great opportunity for us to do that.

However, the catch was this entire production was based in another country and David didn't have the authority to really hire anyone, so he presented the idea to Andy Serkis and the other producers at The Imaginarium. I got a call a few months later when I happened to be passing through London on my way to the World Soundtrack Awards, where I was nominated for my score to *Synchronicity*. Timing is always such a crucial ingredient in how these things go. Once we sat down and talked about the movie I had already read



the script and had been thinking about it for a couple months, so I pitched some ideas about what we could accomplish with the score. After a couple more phone interviews I got the call to pack my bags and head to England.

Q // What were some initial ideas you presented for the score?

A // Ben Lovett

I actually talked more about the score's relationship to the characters and the story more than anything musically specific. There's a tragedy that occurs in the first few minutes of the movie which sets up the hiking trip they take, and even though Robert [Paul Reid] is only on screen for a short amount of time his relevance to the overall story is very important. I felt like the score had a role to play in keeping Robert with the group in the forest, to keep him present and relevant in an emotional sense. That became the foundation of a musical theme exploring the group's fractured relationship and how that loss relates to the arc of our main character Luke [Rafe Spall].

The horror movie structure is just a container to tell a story about a guy losing friends and investigates the ways our relationships with our peers change as we get older. Ultimately what they encounter in the woods is, on one hand, a classic horror movie trope to have fun with, and on the other hand, it's the physical embodiment of Luke's grief and fear about his moment of weakness, his failed masculinity. From a metaphorical point of view, it's the haunting question he doesn't want to face that is stalking him. Essentially, what responsibility might he have had in the event of his friend's death?

Q // What does the character Robert sound like? How is he represented in the score?



A // That theme, the Robert theme and the relationship theme, is one of the only instances where we hear a synthesizer or anything not acoustic in nature. There are two threads in the film that have a more soundscape/synthesis feel. Robert's theme is one, and the nightmare sequences that relate back to Robert's death, because those dreams are all tied to that event.

Everything else in the movie is acoustic and orchestral, which was directly inspired by what's on screen. The visuals are very informative for me. The guys are surrounded by woods in almost every shot, so it seemed natural to approach that with acoustic instruments. The landscape plays a big role in the story, and Bruckner is really good at getting more on camera than just what's in front of it.

The images really have a specific feeling. He and [DP] Andrew Shulkind captured the forest in a way that evoked certain emotions, and I was just trying to draw that out. There are many times when you might not even realize that you are hearing score. The music track is full of elements that are more like musical sound design, like experimenting with the bow against the string, creating a tonal atmosphere with the orchestra to bring the woods to life. That all seemed like an effective way to separate those two different threads — one set of emotions generating internally, and one generating externally.

Q // Can you talk about your instrumentation choices?

A // It's mostly orchestral. There's a lot of percussion and me banging on stuff. I recorded with the London Contemporary Orchestra (LCO), who do all the Jonny Greenwood stuff, played on the last Radiohead record, and do regular live score performances of films like *Under the Skin* [2013] and *There Will Be Blood* [20017]. They are very selective about the projects they get

involved with and I was very excited to have them perform the score for *The Ritual* because they bring more to the music than just playing the notes. They have a unique voice as an orchestra and I felt like they really understood where I wanted to take it.

Q // What's your process for writing a score? How do you like to get started and how did that progress into working with the London Contemporary Orchestra?

A // The most significant influence on the process for scoring *The Ritual* was that I did it entirely in London, and I don't live in London. When I arrived, I had no network to rely on for musicians, arrangers, studios, etc. I had to figure out the logistics of creating the score at the same time that I was unwrapping it creatively, and the clock was ticking from the minute my boots hit the ground over there.

I wound up renting this little studio in a complex called Tileyard, where they turned an old tile factory into what is apparently now a central hub of the London music industry. It's a big diverse musical community and I lucked out and wound up right in the middle of it, which was how I ultimately wound up tracking down the LCO.

99% of the time it was just me sitting in this little studio writing and recording myself working up ideas. David [Bruckner] was hopping all over London managing the final stages of everything from visual effects to color correction to sound design, and of course, the score. Neither of us really slept for about eight weeks. He encouraged me to run with my instincts and because we have such a shorthand and a common language for storytelling, he trusted me to know what he would want and what would help, musically, in the scenes.

Once we had our ideas down for the different scenes and sequences we went into British Grove Studios in London with the LCO and powered through a single marathon session where we threw as much at the wall as possible. I took all that material and fleshed out the individual cues from there because, by default, I was also the music editor. I added additional percussion, guitar, and the synth elements as I was editing and mixing. It was a brutally insane amount of work to do in the time I had, but you know, that's the job. It was nuts but there was also this feeling that I was simply caught in a current of circumstances that was providing an opportunity to make something uniquely different.

Q // What parts did you play on the score?

A // Percussion, mostly. I used whatever I could get my hands on. Anything you hear that isn't strings or horns is me playing. There are only two sounds in the score not recorded in London. The first is a hundred-year-old reed organ I have at home that you pump air through with your feet; it's very spooky and primitive sounding. The other is actually the sound of me banging on my bathtub with a hammer, which I recorded on my phone the night before I flew out. Something about it sounded terrifying, it was the first idea recorded for the score and it made it in there.

Q // Did you have a favorite track on the score?

A // I appreciated the opportunity to dive into the humanity of the score, into the areas where the emotional content wasn't necessarily about tension and suspense. Although, if this movie was a drama with a few suspense scenes, I'd probably say the exact opposite. It was just because I was living in a state of constant panic over there to get it done, and spending my days trying to distill that into music, so whenever there were moments to land a more elegant, emotional beat it was really satisfying. Contextually, those moments are huge in the film.

There's one moment like that, about two-thirds into the film, when the guys finally have a moment of hope after enduring some terrible experiences. It's a well-placed moment in the film where we get to lean into the emotional stakes of the story, the way it feels when

you're in the middle of a nightmare and the walls are closing in on you but suddenly there's this tiny little beacon of hope. The cue is called, "*I Can See the End*," and when the orchestra played it everyone had a moment in the room; it really came to life. Weirdly, for David and I, it was life imitating art because at that moment we were both so indescribably exhausted and worn down, then suddenly struck by the feeling this was all going to work, and we might actually survive the process of making this movie.

Q // Any final thoughts you'd like to share about the score on *The Ritual*?

A // It was one of the most challenging scoring jobs I've ever had because of all of those conditions that I mentioned — working outside of your comfort zone. The reality of creating a score is a balance between the logistics and the creative and how you manage that relationship. I think because I was in such a constant state of stress and tension it all got channeled into the work. It's very likely that the score was informed as much by my actual experience of trying to get it done as it was from my artistic interpretation of what the characters were going through. It was basically the sound of sleep-deprived, schedule-induced anxiety. It was always going to be part of the experience, though, and that's what made it special for me. This film was the appropriate vehicle for that level of torture and it resulted in a score I couldn't have made any other way. //



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// CINEMATOGRAPHER JIMMY MATLOSZ TAKES CANON'S EOS C700 CINEMA CAMERA OUT FOR A TRIAL RUN AND PAUSES FOR DINNER BY MOONLIGHT

Issue 3 // www.InCinematographer.com // BY JIMMY MATLOSZ

Earlier this year Canon released the EOS C700, the most robust, fully functional, cinema camera yet offered by the digital pioneer. The new beefier body design is complimentary to many of the burgeoning digital cinema cameras currently on the market, which Canon has continued to go toe to toe with. Now with the C700, they are poised and ready to take a bigger chunk of the cinematic market head on. Although archival photographs and film make up the majority of the documentary's images, on-the-street coverage of protests in Ferguson, MO, and B-roll shot on location in New York and in the South (helmed by Independent Spirit Award-winning documentarians Bill and Turner Ross) complete Peck's visual montage. Emmy-nominated DP Henry Adebajo, who shot b-roll in New York, also closes the film with his gorgeously stylized portraits of current New York residents of color.

The C700 is a serious camera, not that the C300 and C500 were not, mind you, their image quality and resolution offerings are still some of the best on the high end market. But now and as much as this may seem old school, they have housed all of their incredible technology in a proper larger studio style body. For some, who constantly crave smaller and

lighter this may not be a game changer, then there are those who crave and understand the need for a stronger, more physically reliable and durable set up, one that can handle large cinematic lenses, matte boxes, proper viewfinders, on board monitors and larger capacity batteries and that is exactly what the C700 does.

// PROVING GROUND //

The C700 was put through some rigorous testing, as I have with plenty of cameras before; between some



'one man' interview style shoots, action footage, tripod mount and hand held, exterior and interior, night and day as well as a fun little bit of time lapse thrown in for good measure. The camera was tossed and turned, strapped into a seat over rough terrain, traipsed down a bike path for half a mile, subject to flares and challenging exposures, and left to capture a moon trajectory while I made dinner. And I am happy to say, it performed flawlessly.

Beginning with menu, Canon has always offered one of the most comprehensive and intuitive menus of any digital camera on the market, arguably many of the more user-friendly menus on competitor cameras are influenced by the Canon design, and the C700 continues that tradition. The 'smart side' or operators left side, built-in menu is quick and easy to access and understand, with the most important elements key to a cinematographers success and creativity at their fingertips: Just Press, Scroll and Click and you are on your way, it really is that simple. Arguably the most important setting would be 'COLOR' this is where you set your capture settings, your recording format, this menu setting is truly ground zero for any project captured on the C700. The label 'COLOR', might imply, viewing color or 'LOOK', however, I reiterate, this is truly where you set the recording format for your production. Rather than bore you with the multitude of options and details, I am sure you would rather access a video created by Canon on their own YouTube channel and presented by Loren Simons of the Canon support facility, in Burbank, CA on how to configure your capture settings.

Spend a few moments learning this and knowing this and you will master the use of your C700. Once 'COLOR' is set move freely amongst any of the following: Frame rates (FPS) variable from 1fps-60fps in what one would assume to be the most common resolution and codec 4k XF-AVC. Then there are a plethora of additional frame rate options with a variety of codecs and internal settings including 4:2:2 10-bit center crop 2k, which allows for frame rates up to 240fps. (NOTE: Canon has teamed up with CODEX for an external dockable recorder to allow for RAW 4k and 4.5k with frame rates including 120fps and 100fps respectively, this option is available however was not used for this camera review.) The C700 allows for shutter angle options just as easily attained



ABOVE Cinematographer Jimmy Matlosz
RIGHT Canon's EOS C700 cinema camera

as frame rate options, from 1-360 degrees, and ASA (ISO) from 160 to an insane see in the shadows in the dark 102,400ASA, all accessible and easy to change and lock in.

In addition to these important features, there is an iris adjustment setting, which was not used, due to the fact that this test was performed using PL mount lenses; as such this is more applicable to an EF lens. White Balance setting (WB) offers standard presets like 3200K, 4300K, 5600K, but allows the user to set up a wide array of personal choices from 2000K all the way up to an extreme 15,000K tickling the edge of ultraviolet and offering a fanciful palette of in camera color options.

The C700 also comes with an external control panel exactly like the internal control panel, which may be mounted on an adjustable arm and positioned to your liking, or mounted in the right side of the camera with two small screws.

// INTUITIVE TOOL //

More and more, digital cinema cameras seem to be complimenting one another and becoming a common user-friendly tool for all. There were no surprises with the C700. Out of the box, it really is as intuitive as they come. The real proof is what you do with it, how you use it, and how you can integrate it with other Canon cameras, lenses and accessories, or even that of the competitor. The C700 comes with a built in V-mount battery mount on the back, which helps to counterbalance the weight of a Canon Cine Zoom which you are sure to want to use. Upon hitting the power button, you will certainly be impressed with the speed of startup and readiness, just seconds between

pressing 'POWER' and rolling, with confidence that you are getting all that you see through the clear, sharp and detail oriented viewfinder. Speaking of the viewfinder, it truly is impressive, comfortable and easily adjustable. I like the heads up displays, and I used the overlay waveform quite a bit; it came in handy in a pinch. Did I mention the built in ND filters? Certainly a plus, for quick operation, increments set in classic Kodak measurements of .06, 1.2, 1.8, 2.4 and 3.0, from 2-10 stops that is.

The C700 has very impressive latitude, and seems to see deep into the shadows with little or no noise. I comfortably switched to a lower ASA of 160 for daylight, interior and exterior, and maxed out at 800 ASA at night for that time-lapse sequence when I noticed the stars had a good exposure and sky was a true black. Highlight detail is nice; roll off to overexposure feels natural and clean respectful of the look we have come to know with the C300 and C500. Skin tones were spot on, and even offered a natural organic quality, similar to that of the Canon DSLR.

// FULL RANGE ENCODING //

As for post-production: the truth is technology on the camera side is changing faster than most post-production tools can be written to keep up. Keep in mind that when shooting in the Canon Log XF-AVC format, the video data utilizes full range encoding, 0-255 on an 8-bit scale, and not all NLE's recognize that automatically as full range data.

Make sure your NLE software, be it DaVinci, Avid, Final Cut, Premiere, or what have you, is set up to access the full range that the C700 offers. As updates continue and of course for any questions regarding the NLE platform you are using, check in with the Canon either on their support website or by contacting their Support Facility, for excellent professional guidance.

When on set for QC of dailies and review, Canon offers their own software for viewing every bit of metadata the camera has to offer, aptly named XF Utility and available as a free download on their website support page.

This utility offers option from location notes input through the WFT-E6A (wireless transmitter) and iPad interface, to frame-by-frame tilt and roll



readings captured by the camera itself, and every bit of information you would want can be seen and documented. In addition, because of that wealth of metadata, the software can figure out the proper viewing LUT to apply to your footage and allows you to export individual frames for reference. Because so many filmmakers have their own "magic LUT", having the ability to see a technically accurate image builds a WYSWIG confidence.

Overall the EOS C700 integrates into most professional post-production workflow like a dream, and the additional option of shooting various flavors of ProRes assures a nice range of options for a variety of productions.

(It's also important to note that Canon's Wide DR gamma, probably one of the more popular curves for quick turnaround broadcast clients, utilizes a 16-255 code value range.)

// RIGHT STUFF? //

In closing the Canon C700 is sure to be a hit, the fact that Canon has created a space to test, touch and educate in Burbank, CA raises the opportunity for more filmmakers to get their hands on it and prove to themselves that the Canon C700 is the right camera for their next project. Couple that with a C100, C300, C500 or even a 1DS or 5D, a full set of Canon Cine Zoom lenses and your production would be well suited to tackle any location or shooting situation with the confidence that image quality will be incredible and thoroughly consistent. //

FOR MORE INFORMATION: www.usa.canon.com
www.dpmatlosz.com

THE TRADE: Perspectives On A

SHOT WITH CANON EOS C300 MARK IIs, THIS EXPANSIVE DOCUMENTARY MINI-SERIES CHRONICLES THE GLOBAL OPIOID SUPPLY CHAIN, THE DAMAGE IT CAUSES AND ATTEMPTS TO STOP IT. // BY JAY HOLBEN

Since the year 2,000, more than 300,000 people have lost their lives due to opioid deaths, and more Americans now die from drug overdoses than in car crashes. A significant portion of this opioid problem is the heroin trade, and almost all heroin in the U.S. comes through Mexico. *The Trade* is a five-part Showtime documentary mini-series that follows every step of the heroin problem - from the addicts and their families to the dealers to law enforcement trying to stop the trade to the traffickers bringing drugs across the boarder to farmers harvesting opium poppies in the fields to the cartel bosses in Mexico. Every facet of the supply chain is investigated in detail.

The mini-series was created by and is produced by Matthew Heineman, the creator of the similarly themed Academy Award-nominated 2015 feature documentary *Cartel Land*. And the *Trade* production relied on two two-person teams and one three-person team, one in Mexico, one with law enforcement and one with the addicts and their families.

Each field team was comprised of a producer and a cinematographer, with the exception of the Mexican team, which also incorporated a “stringer”/ translator. Heineman’s teams were cinematographer Matt Porwoll and producer Damon Tabor with the

addicts and their families in Ohio (the state with the highest number of heroin overdoses in the U.S.); cinematographer Peter Hutchens and Brent Kunkle with law enforcement, and cinematographer Max Priess, producer Myles Estey, along with Alejandro Suverza for the first portion and cinematographer Ross McDonnell, replacing Priess, for the second portion of the Mexico shoot with the cartel members.

In addition to the tiny production crews, the gear was kept to a minimum as well. The entire production was single-camera shooting with the Canon EOS C300 Mark II and a set of Canon EF lenses.

Since each field team would be operating autonomously, Heineman and Porwoll decided on some “rules” to help each cinematographer maintain a consistent look. Part of these rules included a limitation on lenses. Porwoll chose the Canon EF-S 17-55mm f/2.8, 24-105mm f/4 L IS USM, 70-200mm f/2.8 L IS USM and a 24mm f/1.4 L II USM prime.

“With the size and weight of those lenses, you can carry them all on your belt along with extra batteries and media and have everything you need,” attest Porwoll. “You never have to run back to the car to get something and you’re not trying to lug around a bunch of cases. Several of those lenses have



Crisis

image stabilization, and that's really important with a mostly handheld situation and these lightweight, small cameras. It's about trying to restrict the stuff that we're carrying, yet still make sure that we have the range of focal lengths we need. Mostly, the 24-105mm (f/4 L IS USM) was the go-to in a lot of situations. One of the rules we set was that we would mostly shoot at f/4 or f/5.6 to make sure we weren't separating the characters from the environment too much — in a documentary like this the environment is an important part of the story. We threw in the 24mm (f/1.4 L II USM) prime just for situations where we needed that extra speed, especially with law enforcement and the addicts story."

"I did bend the rules a little bit," adds Hutchens. "I talked with Matt [Porwoll] and added a 50mm f/1.2 [L USM] because I knew I would be in a lot of low-light situations. There were times when we'd be in a car, at night, and only have street lights or passing cars or the light of a cell phone to see by. I often needed that extra speed and both the 50mm and 24mm were great for that."

"Instead of saying 'We really want this specific look, style and feel,' we limited the choices of gear and created a consistent look through that," offers Porwoll. "It creates a particular look from the limitations. We also all only carried one light — a Litepanels Astra — although we only used it for formal sit-down interviews. The fact that we have only one camera per

team and limited lenses with no augmented lighting most of the time is what really creates the cohesive look of the show."

Porwoll is an Emmy award-winning cinematographer based in New York. He previously worked with Heineman on *Cartel Land* and won the Best Cinematography award at Sundance in 2015 for that film. His other work includes *City of Ghosts*, *By the People: The Election of Barack Obama* and HBO's *Crisis Hotline: Veterans Press 1*, which won the 2015 Academy Award for Best Documentary Short.

"When I first started talking to Matt [Porwoll], it was really clear that he was interested in collaboration," attests cinematographer Peter Hutchens, who was embedded with law enforcement, including the Franklin County Sheriff's department in Ohio and Homeland Security forces. "None of us could be in the same place at once, so it was important to develop a visual style that would compliment each other — but also owning our different part of the story line. I really appreciated that about Matt — he was really open to dialogue about it. His approach was: rather than throwing gear at the problem, let's take a stripped-down approach going with the C300 Mark II and these few lenses. We'd leave the gimbals and lighting at home and really allow ourselves to become part of the scene and move quickly and efficiently. That appealed to me — both of us have experience on high and low budget, but this style of limiting our footprint really frees us up to tell the story."

Hutchens won the Sundance Cinematography Award in 2011 for his work on the feature documentary *The Redemption of General Butt Naked*, which brought him to the attention of Heineman and Porwoll. His other work includes *Border Jumpers*, the acclaimed PBS *Wide Angle* series, Oprah Winfrey's *Belief*, and the CNN Original Series *This is Life with Lisa Ling*.

The cinematographer on each *Trade* field unit was also responsible for the sound recording duties. Each camera had an on-board microphone and two wireless lavs. When necessary, a wireless boom could replace a lav and it was the producer's duty to act as boom operator.

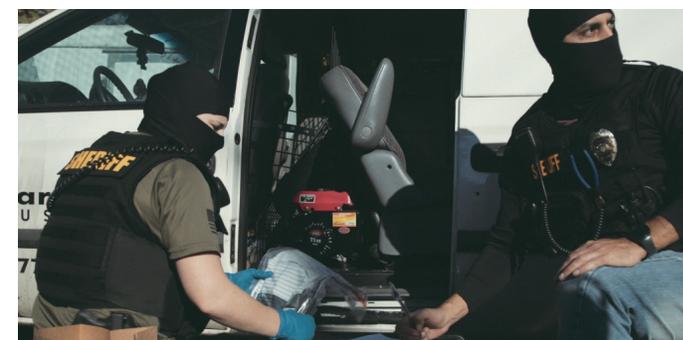
"The teams we built for this were specifically tailored so that we could keep consistency of character from Mexico to the law to the users," continues Porwoll. "This was also to maintain consistency for the subjects in the documentary. If we had new faces popping up all the time, it would inhibit our relationships and trust with those individuals - in some cases that trust was very hard to establish. We were all 100 percent committed to this project - over many months of shooting. Matt [Heineman] would supervise the entire shoot from a higher perspective in New York and we had daily conversations with him updating him on what was shot and what happened for the day, but the field teams remained small and consistent.

"Matt's films are all about access and intimacy," continues Porwoll. "We'd spend as much time as humanly possible with the subjects - and that comes with a lot of responsibility from everyone involved. The choices of who would be shooting and who would be producing in the field were really carefully arrived at."

"We each did develop our own sub-style in the field," attests Hutchens. "When I was shooting with law enforcement, we'd often have a scene with 20 different people in it and it would be up to me to determine coverage on the fly. It's only one camera - so, by necessity, my coverage of each scene is a little more action-packed than say, Matt's [Porwoll], who has a lot of elongated scenes with the addicts and their families as they go through their troubles. With the law side, there's a lot of jumping in and out of cars and moving quickly.

"One of the things in our favor is that Heineman projects are always perspective-based films," continues Hutchens. "We're always in the perspective of the characters, discovering information as they do. When I'm sitting in a car with a detective listening to the radio as a SWAT team raids a house or marked units are searching for a suspect - we're with that





detective in his anticipation of being able to get onto the scene. We're not switching perspective suddenly to the SWAT team, we experience what the detective does and follow his perspective of the events as they unfold."

"What we didn't want to do was allow the audience to know more than our characters know at any given point," adds Porwoll. "It's one camera, one character perspective. If the detective is listening to that radio and wondering where the suspect is, so are we. We're only gathering information as they get it, and that approach helps convey that sense of uncertainty and constant wonder."

To necessitate quick movements, in addition to foregoing lighting and keeping the package small, Porwoll chose to equip the teams with Think Tank Photo belts – a modular pouch system designed to easily carry lenses and accessories. In addition, they used Wooden Camera's Universal Baseplate system for shoulder-mounted handheld shots with a quick-release for getting smaller.

"I love working with the C300 Mark II. It's compact and fast with a great image. It's really made for documentary-style shooting."

// Max Preiss, Cinematographer

Staying "small" ended up being a major asset for most of the production, but surprisingly also had a positive effect on shooting with law enforcement. "I think our being small let us see the cops in a different way than they're used to being portrayed," offers Hutchens. "Especially right now, there's a deep skepticism of the media from law enforcement. It took us a while to build the trust with the police officers we were following, but being less of a footprint really helped. There was a moment in the second episode when the two detectives we were following completely forgot we were there and they have an argument in the front seat. It's a very real, truthful moment as they passionately argue the best way to handle a suspect in their case. They just want to solve the case. It was one of my favorite moments that we captured because it is so pure – even the officers told us afterwards that they completely forgot we were even there. The small footprint of the C300 Mark II and our two-man team really helped make that possible."

Nestled deep in the wilderness of Guerrero, Mexico, cinematographer Max Preiss and producer Myles Estey were



embedded with a Mexican drug cartel — surrounded, daily, by a dichotomy of heavily armed *sicarios* (hitmen) and *campesinos* (humble poppy farmers).

For many documentarians, the task of gaining the trust of your subject is a delicate and challenging process. For Preiss and Estey, the challenge was substantially harder. By nature, drug cartel members are suspicious of outsiders and even more so of individuals carrying cameras and documenting their illegal activities. The field team spent months building relationships with the cartel Boss, *sicarios* and farmers. The two spent time with them day after day, without cameras, just to develop a trust so that one day they could show up with a camera.

“The way the C300 Mark II is built and designed, the buttons, menus, everything is accessible. You don’t have to think about the gear, but rather you can think about your story and how to react to the moments as they unfold in front of you.” // Matt Porwoll, Cinematographer

“There was some sensitivity for sure,” Preiss recalls. “At first, there was suspicion that we were drug enforcement officers. Previously, DEA officers had posed as documentary crews [to gather intel on cartel activity], so there was a lot of suspicion around us, but we gained their trust over time. There wasn’t an issue with the *campesinos* who pick the poppies; they’re just farmers. That’s how they see themselves. They don’t feel that they’re doing anything wrong. Poppies or corn, it’s all the same to them. The *sicarios* only consented to be filmed once the Big Boss had signed off, but there were still some who didn’t want to be on camera. They kept their faces hidden or we weren’t allowed to shoot them. When we were with the Big Boss, he would tell us who could be

filmed and who couldn’t. He never wanted to be in a photographed with drugs or money.”

Preiss is a Berlin-based cinematographer who studied at the California Institute of the Arts in Los Angeles. He bounces between narrative films and documentaries. He photographed the German unit of James Cameron’s *Game Changers* documentary and previously worked with Heineman on the doc series *City of Ghosts*.

“*The Trade* was an exercise in economy,” attests Preiss. “I love working with the C300 Mark II. It’s compact and fast with a great image. It’s really made for documentary-style shooting. All of the buttons are in the right places, intuitively, you can reach all the functions on the fly instead of fumbling with an HDSLR where you might lose a shot because you’re changing a camera setting.”

“Matt [Heineman] and I have shot all our films on the C300 Mark II,” adds cinematographer Porwoll. “It’s a camera that we’re incredibly comfortable with. Coming from verite filmmaking, it’s really the best tool for us. I get asked a lot about other cameras that have better technical specs - but from Matt’s and my own perspective, the technical ability of a

camera only gets you so far. The tool has to be an extension of your body and work for you. The way the C300 Mark II is built and designed, the buttons, menus, everything is accessible. You don’t have to think about the gear, but rather you can think about your story and how to react to the moments as they unfold in front of you. We decided early on that this was the camera to use - we’re not using a lot of slow motion; we’re not needing 4K or higher deliverables. The small factor of the C300 Mark II is perfect for our run-and-gun style of shooting; it just made sense.”

The compact nature of the C300 Mark II fit perfectly into the scaled-down production. Preiss notes, “*The Game Changers* was an exercise in a huge-scale

documentary. We had a truck full of lights, a B-cam operator and a gaffer. But in Mexico for *The Trade*, there were only three of us, one camera and it was all on us to take care of everything. We'd be sleeping in abandoned houses at night, where I would download each day's footage onto my laptop and charge batteries and get ready for the next day. We did this for about seven months. There was a period where we weren't able to shower for 10 days or more, shooting out in remote locations where there is no cell coverage and the nearest town or village is miles and miles away down long dirt roads. It's surreal to be out in the middle of nowhere, sitting next to a tree out on a riverbed with a man carrying an assault rifle protecting millions of dollars worth of heroin gum.

"At the same time, after we developed relationships with these people, we bonded pretty well," Preiss continues. "One afternoon the **sicarios** challenged us to a basketball game, so I set up a sunset time-lapse shot in front of the Boss's house and went off to play ball with them. They took off their guns and we went at it. Alejandro and I won the first game, but made sure to lose the second. Just in case."

With the production in Mexico stretching past seven months, Preiss had to leave *The Trade* to go shoot a feature film he was already committed to and cinematographer Ross McDonnell stepped in to replace him. McDonnell is a Dublin-based filmmaker – a director, cinematographer and still photographer. He, too, was part of the *Cartel Land* production team.

"[Max and Myles] had prepared the ground in Mexico really well," notes McDonnell. "They had developed these great relationships with the Mexican Federal Police, the cartel, everyone. It made my transition down there pretty seamless. I was also able to see some of the work that had already been done to help continue that style."

"Determining what you shoot, how you cover, how much of an impact you have on the subjects, that's always tricky," continues McDonnell. "As a cinematographer, you want to capture the essence of the moment and what the scene is all about. It's a balancing act, and if you get it right, you just move on. When you get it wrong, you end up beating yourself up all day. If you miss that *really* key moment because you were focusing on someone else, it can



"The small factor of the C300 Mark II is perfect for our run-and-gun style of shooting; it just made sense." // Matt Porwoll

be hard. You just try to ensure that you're following the essence of what is happening and anticipate how conversations will flow and notice when the key moments are evolving. You try to read people's emotions and their dynamics; their body language and anticipate where you need to be. That's all you can do."

"Each of us had our own perspective on the opioid crisis," concludes Hutchens. "One of the things that stuck out for me were the moments when the three teams seemed to be working in complete unison, even though we were worlds apart. There was a moment in the law enforcement storyline when we really saw, first hand, the level of influence the cartel in Mexico has directly on the families and addicts – the whole chain coming together in front of our eyes – and it made it feel like we were all capturing something truly universal to this part of the world. When we stopped a couple who were just leaving a crack house and one of our patrol officers is searching their car and we hear the tiny voice of a 5-year-old girl waking up in the back seat asking, 'What are you looking for?' – it connects law enforcement with the human side of the crisis. Those moments really brought the whole thing home for me." //

The Trade is now playing on Showtime and Showtime OnDemand.

TECH SPECS
2.39:1 (spherical; cropped)
Canon C300 Mark II
Canon EF lenses



“Time and Access to Justice Ginsburg Was Very Limited”: Cinematographer Claudia Raschke on *RBG*

January 24, 2018 // Cinematographer Interviews, Sundance // BY FILMMAKER STAFF

Few figures remain as adored among liberal Americans as Supreme Court Justice Ruth Bader Ginsburg. Despite this, and like all her fellow justices, the public has little access to Ginsburg as a human being. One isn't likely to see photos of a Supreme Court justice at dinner or in a Starbucks line. Hence the enormous appeal of *RBG*, a new documentary on the life of Justice Ginsburg from directors Julie Cohen and Betsy West. The film makes its debut at the 2018 Sundance Film Festival. *RBG's* cinematographer, Claudia Raschke, discusses the high-stakes shoot and the importance of all-woman team on this project below.

Q // Filmmaker

How and why did you wind up being the cinematographer of your film? What were the factors and attributes that led to your being hired for this job?

A // Claudia Raschke

I have worked in the film industry for 30 years, shooting feature films with complex lighting set ups and feature documentaries with extensive cinema vérité challenges. I believe that the *RBG* producing team, Julie Cohen and Betsy West, were already convinced about my expertise in cinematography but also wanted to ensure to have an all-women team to represent strength of leadership

to echo Justice Ginsburg's equal rights fight throughout her life. Recent statistics show that only 4 percent of cinematographers are women. Cinematography is a male dominated field by 96 percent.

Q // Filmmaker

What were your artistic goals on this film, and how did you realize them? How did you want your cinematography to enhance the film's storytelling and treatment of its characters?

A // Claudia Raschke

Cinéma vérité scenes with Justice Ginsburg had to be as unobtrusive as possible to ensure authenticity. It was our goal to show her nature and magnificence. For this I worked with mostly natural lights and a set of Canon zoom lenses. As a vérité shooter, one needs to quickly evaluate a location's sweet spots and downfalls for lighting and grasp the scope of the situation to capture the most cinematic storytelling coverage. As a former dancer I rely on my internal sense of choreography to film a scene. Each character has a unique movement which correlates to what role they play at a given moment. With Justice Ginsburg I had to learn to move around without disrupting her focus or limit her thinking space. Timing was everything.

Q // Were there any specific influences on your cinematography, whether they be other films, or visual art, or photography, or something else?

A // Claudia Raschke: What drives my passion is the hunt for the right camera angle when it all comes together, lighting, contrast, framing and the focus to cinematically catch a character's authenticity. That's pure gold. Inspirations are all around in everyday life. Mostly my mind is drawn to look at lighting, contrast ratios and framing for each situation I encounter, no matter if I'm waiting somewhere, sitting in a subway or walking down a street. I'll catch a glimpse of perfect alignment and hold on as long as the story allows for it. You can't plan for it, but you have to be alert to see these opportunities. Therefore I like to spend as much time as possible on location scouts, imagining the possibilities, talking it through with my directors. That was where we synched up our vision and decided on a strategy.

Q // What were the biggest challenges posed by production to those goals?

A // Claudia Raschke: Time and access to Justice Ginsburg was very limited. She has many responsibilities, a very busy life and a tightly scheduled daily agenda. Every on-camera moment had to be pre-approved by the court. We had a timekeeper that would let us know: "You have 20 minutes and that's it." Betsy, Julie and I did a lot of creative brain gymnastics to maximize each granted appearance. Every one of them had a different set of rules. It was a challenge. Our strategy became to let go of time-eating set ups, strip away to what was the most essential story point and find the best way to make it work.

Q // What camera did you shoot on? Why did you choose the camera that you did? What lenses did you use?

A // Claudia Raschke: For the look of the documentary I decided to shoot on the Canon EOS 300 MK 2 with Cinema Prime lenses for all of our interviews. We used a combination of a two-camera setup with a 50mm and a 85mm primes for each single interview, as well as a 35mm for the interviews with two subjects in frame. Canon Cinema Primes allowed me to isolate our subjects in a multitude of locations by choosing ultra-shallow depth of field. This offered me painterly control over the background bokeh. Cinema Primes are versatile and interpret the scene in a way similar to how your eye perceives it. We were able to shoot with minimal distortion. The Canon Cinema Primes added a creamy luminance to skin tone like no other prime lens I've used.

For most of the vérité shots, we used the Canon EF Zoom 16-35mm, 24-70mm T2.8, 70-200mm, and the 400mm Prime lens with a two-time extender during the opera performances and talks Justice Ginsburg gave to large audiences. The Canon EF zoom lenses are light-weight and worked very well in high contrast situation for all our exterior scenes as well as the high contrast lighting during her on stage performances.

Q // Describe your approach to lighting.

A // Claudia Raschke

Every interview had to capture the character's nature and visually connect them with the location they were in. Therefore I chose the camera angles for each location with great care, imagining broad strokes of naturally looking soft light in conjunctions with bright dashes and highlights to let the eye settle in on each

subject's reflection of Justice Ginsburg. Shooting with two cameras meant to light for two angles and carefully craft the images to work together in harmony. Therefore all interview set-ups have a slight movement to them. Having the camera angle breathe with motion bridged intercuts, and represented the flow and wander of their thoughts.

Q // What was the most difficult scene to realize and why? And how did you do it?

A // Claudia Raschke: The nature of documentaries is that each scene you shoot is a live event. You can't go back and redo a moment in time. Once it happens it's over. The hardest part in cinema vérité style shooting is to decide at the right time to move to the right angle. Having very limited access to Justice Ginsburg made every moment count times 10. We all felt the immense pressure of high expectations. I could not afford any tech problems or indecisiveness. I had to think fast and be quick on my feet. It seems that time warps in

moments like this. My thoughts become very clear and super focused. Then all that pressure falls away and what is left is a dance and being fully present with the character that wins the day.

Q // Finally, describe the finishing of the film. How much of your look was "baked in" versus realized in the DI?

A // Claudia Raschke: The documentary was shot 3.8K in Canon Log and fully color corrected by Ken Sirulnick at GLUE, NYC. //

TECH BOX:

- **Camera:** Canon EOS C300 Mark II
- **Lenses:** Canon Cinema Primes and Canon Zooms
- **Lighting:** HMIs, Diva 400, LED Astra 1000, ARRI Kit, 8×8 silk, 6×6 silk & solid, 5 in 1 • Flexfill
- **Processing:** Digital
- **Color Grading:** Colorist Ken at GLUE, NYC

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