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# EDITOR'S VIEW



## THE REALITY OF PRODUCING VIRTUAL REALITY

**V**irtual reality is becoming a vital medium for storytelling, and filmmakers are experimenting with the endless ways that VR can be used to engage audiences. It's a new frontier—and without its challenges—and many of those involved in content creation are looking for guidance and expertise.

With that in mind, we're producing a new event, Virtual Reality 20/20, that takes place October 17 at the TimesCenter in Times Square in New York City.

Offering educational sessions about the latest technical developments and creative applications, the conference is also designed to connect VR producers and distributors.

For more information, visit [www.vr2020summit.com](http://www.vr2020summit.com). To purchase early-bird tickets for the event, stop by <https://nbmedia.swoogo.com/TVandVideoweek>.

I look forward to seeing you there.



The Frontline VR documentary "On the Brink of Famine," distributed via Facebook 360

### Why Attend Virtual Reality 20/20?

- Meet some of the VR/AR industry's top executives and most innovative creators
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- Connect with potential funding, content and distribution partners
- Explore many different types of VR/AR devices and content with hands-on demonstrations
- Participate in interactive discussions around ways to monetize VR/AR content
- Learn best practices around VR filming techniques
- Uncover surprising ways that VR/AR is disrupting businesses across the nation
- Generate visibility for your VR/AR device or creative project



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# UPDATE



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Maggie (Greta Gerwig) and John (Ethan Hawke)

## TECHNICOLOR POSTWORKS HELPS MAKE *MAGGIE'S PLAN* "SPARKLE"

For postproduction on director Rebecca Miller's romantic comedy *Maggie's Plan*, Technicolor PostWorks New York furnished suites and systems to picture editor Sabine Hoffman and her crew. The company also provided resources for dailies processing, editorial finishing, color grading, sound mixing and deliverables.

*Maggie's Plan* tells the quirky story of independent, 30-something Maggie (Greta Gerwig), whose plan to have a baby as a single mom is derailed when she falls in love with "ficto-critical anthropologist" John (Ethan Hawke) and destroys his marriage to the brilliant Georgette

(Julianne Moore).

Cinematographer Sam Levy, collaborating with Miller for the first time, captures New York City in warm, glowing tones. "I spent a lot of time with Rebecca during preproduction, breaking the script into its elements," Levy recalls. "She described the look she wanted as 'awake' and I intuitively knew what she meant. It should sparkle and glow."

Levy drew inspiration from California still photographer Janet Delaney, whose work employs color in a striking but nuanced way. In preparing for the shoot, Levy shared one of Delaney's photographs with

DI colorist Alex Bickel, who referred to it in preparing a camera LUT that was used on the set and in dailies production.

Bickel says of the aesthetic Miller and Levy were aiming for, "It's sweet and romantic, but with a light touch. It's colorful in just the right way."

Bickel says that the grade is realistic, except for a few times where it becomes more stylized and artistic to underscore points in the story's emotional arc.

After the film was shot and edited, Bickel worked with Miller and Levy to refine the look during postproduction finishing sessions. "Alex and I would work on a reel,

and at the end of the day [Miller] would come in to review what we'd done," Levy recalls. "Alex is a brilliant guy with a wicked sense of humor, so we had a lot of fun ... and just enough time to produce a great film."



Maggie (Greta Gerwig) and Georgette (Julianne Moore)

online 

Read more about *Maggie's Plan* at [creativeplanetnetwork.com/current-issue](https://creativeplanetnetwork.com/current-issue)



# Hangmen Stage Production Captured for Broadcast

PHOTO BY HELEN MAYBANKS



From left, David Morrissey, Johnny Flynn and Simon Rouse in *Hangmen* by Martin McDonagh, directed By Matthew Dunster



Leader LV5490 in NEP truck

NEP Visions recently completed the UHD capture of Martin McDonagh's play *Hangmen* from the Wyndham Theatre in London's West

End. The 173-minute production starring David Morrissey, Andy Nyman and Johnny Flynn was delivered to Vue Cinema audiences around the

world as a 4K DCP (digital cinema package) with the support of National Theatre Live.

NEP Visions used a Leader LV5490 4K multiformat waveform monitor as the master reference instrument for the project. "The LV5490 proved very useful both for initial lineup and during the stage production," says Chris Cannon of NEP Visions. "It enabled us to ensure precise phase alignment between the four HD-SDI channels that carry the UHD signal stream. We also used the LV5490 to check the colorimetry of the six Sony PMW-F55 cameras we used for the project. The monitor performed very well and has the further advantage of being extremely compact."

# SAROFSKY INTRODUCES THE VIOLENT WORLD OF ANIMAL KINGDOM

Erin Sarofsky and her team at Chicago-based design and effects company Sarofsky created the :60 opening title sequence for the TNT series *Animal Kingdom*. "Through these images, the *Animal Kingdom* main titles prepare the audience for the violent, amoral and virile world they will encounter in this show," she explains.

In the open, Sarofsky explores the family dynamic of the series using the metaphor of the tattooing process that matriarch Smurf (Ellen Barkin) endures. The opening sequence intentionally juxtaposes jarring imagery of scenes distilling the childhoods of her family members and their transitions to manhood with the main tattoo visual thread. Stuttering visual effects and shifting

on-screen type add subtle finishing touches to the open's visceral punch.

"We used a variety of different cameras on this project, and each served a specific purpose," recalls cinematographer Mike Bove. For the tattoo sequence, the team used a Vision Research Phantom Flex4K outfitted with Cooke S4 prime lenses and diopters for macro details. Shooting in 4K, Bove says they maxed out the frame rate at 938 fps. For various POV sequences—riding a motorcycle through traffic in Los Angeles, getting physical on a basketball court in Miami—the team used a Sony a7R II and a Canon EOS C300 Mark II, the latter with Zeiss CP2 primes. For everything else they used an ARRI Alexa with the same Cooke S4 primes.



Based on the Australian motion picture "Animal Kingdom" Written by David Michôd



Executive Producer Jonathan LisCo

 **Read More:** See page 12 for our interview with cinematographer Loren Yaconelli, who discusses production on the TNT series *Animal Kingdom*.



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## AARDMAN AND RAPT MEDIA PRODUCE INTERACTIVE “DEAD LONELY”

**R**apt Media and Aardman collaborated on a short interactive project called “Dead Lonely.” Part film and part game, it is set in a postapocalyptic world where the story’s protagonist, a zombie named Fred, is searching for

his long-lost love. The viewer is invited to make decisions for Fred, guiding and directing the story’s action.

Aardman Digital group creative director Daniel Efergan says, “We wanted to partner with Rapt

Media on this creative endeavor because our two teams have similar beliefs and philosophies about interactive content and how it can change the way people engage with stories.”

Erika Trautman, founder and CEO of Rapt Media, adds, “‘Dead Lonely’ is an innovative and unforgettable journey.” To view the film, visit [www.raptmedia.com/project/aardman-dead-lonely](http://www.raptmedia.com/project/aardman-dead-lonely).

## Street Fashion Documentary Gets Support from Miller

**C**reating a brand film for Bangkok-based fashion company Loco Mosquito Guerrilla Operators, director Roxanne Halley explains she wanted it to feel “authentic, with a distinct Bangkok flavor highlighting some of the local places and people the designer drew his inspiration from.”

Halley took light, portable, unobtrusive



PHOTOS BY MONIQUE BRODIT



equipment with her, opting for a Miller AIR tripod system, a Canon EOS 7D DSLR camera with a pair of Canon lenses, and Smart Lav and VideoMic Pro microphones from RØDE Microphones.

“We were shooting in a vast variety of locations and needed our gear to be extremely lightweight and inconspicuous,” Halley recalls. “The Miller AIR tripod was so versatile that we could quickly make it fit any position we were shooting in, no matter how cramped or difficult. Shooting on a moving boat and tuk tuk would have been near impossible without a tripod as simple to use and as lightweight as the AIR.”

## NOMA: MY PERFECT STORM CAPTURES CULINARY EXPERIMENTATION (AND EXCELLENCE)

Director/cinematographer Pierre Deschamps describes his approach to capturing the mood and pace of *Noma: My Perfect Storm* as something between “classic documentary-making” and “cinematographic essay.” The film follows the unique culinary rituals of renowned chef René Redzepi and his approach to foraging and food presentation his Noma restaurant in Copenhagen.

“I often find it is by observing the body language of my subjects—or their nonverbal communication—that I discover the ‘non-obvious’ that [in turn] shows me who they really are,” Deschamps says. “It is unpredictable until it happens. This is why I prefer to shoot [footage] myself.”

The filmmaker used a variety of cameras, primarily a RED EPIC shooting at 5K (4K for slow motion sequences) and a RED Dragon. “The EPIC was used for the kitchen action, the food plating, nature scenes and the ‘fisherman and forager’ at work in natural surroundings,” the director says. “It enabled me to switch to a high frame rate and still have access to high resolution. But it was a great challenge because I was a single operator doing everything including audio and light.”

Deschamps used a GoPro camera to introduce Redzepi’s point of view while at work in the kitchen, as well as POV shots of Redzepi foraging in the forest and cycling around Copenhagen. “I shot at 2.7K resolution so I could have a bit of latitude in postproduction if I needed to reframe.”

He also used a Canon EOS 5D Mark III, primarily for interviews. Deschamps believes the 5D provided greater intimacy and was “less intimidating” than the RED EPIC.

“My goal was to be as invisible as possible and to shoot at a distance from a fixed position,” the director/cinematographer says. “I played with a set of [ARRI] PL lenses to tell my story and capture what was in front of me. The wide lenses [11-16mm or fixed 12mm] were used to show the kitchen from a general point of view, and the medium lens [19-90mm] to get me closer to the action while still leaving some possibilities to play with the environment,” he says. For his tele-lenses, he used a fixed 100mm and a 200mm to capture facial expressions and details of the cooking crew’s hand movements.

For one segment, Deschamps collaborated with



Chef René Redzepi and his Noma culinary team



In the Noma kitchen

time sequence cinematographer Chad Gordon Higgins for a seasonal time lapse scene. “It was an interesting challenge. We shot 3,800 stills for the same 240-degree shot in each season during the year to portray the seasonal changes over 12 months,” he says. “I selected what René Redzepi had said about seasons and their produce and decided which time lapse should come first, the timing of each season, all of that calculated with the music I had chosen for that sequence.”

—John Merli



Director/  
cinematographer  
Pierre Deschamps

# CRIME, CONFLICT & HANDHELD CAMERAS

## Recording the Tense Realism of *Animal Kingdom*

BY DEBRA KAUFMAN

Cinematographer Loren Yaconelli, who's shooting nine episodes of the first season of TNT's *Animal Kingdom*, doesn't have a lot of time. In a few minutes she'll be going up in a small plane, camera in tow, to shoot some of the series' characters jumping out of it. For the adrenaline-fueled series that follows a criminal family headed by matriarch Janine "Smurf" Cody (played by Ellen Barkin), Yaconelli heads up the camera crew that covers their exploits.

Based on the award-winning 2010 Australian movie of the same name, the 10-episode TNT series, which debuted at the Tribeca Film Festival, starts similarly, but then goes its own way. Barkin's larger-than-life character, Janine "Smurf" Cody, rules the roost over a posse of volatile, dangerous sons: her right-hand man, adopted son Baz (Scott Speedman); the eldest, mentally disturbed son Pope (Shawn Hatosy), who's just been released from prison; drug- and adrenaline-seeker Craig (Ben Robson); and the youngest, suspicious Deran (Jake Weary).

The pilot, written by executive producer/writer Jonathan Lisco, directed by executive producer John Wells and shot by cinematographer Daniel Moder, opens with the heroin overdose death of Smurf's estranged daughter, who leaves behind a teenaged son, Joshua "J" (Finn Cole). The freshly orphaned J doesn't know where else to turn but to his grandmother, who immediately takes him in. J meets his menacing uncles and it doesn't take him long to figure out they're involved in hard drugs, guns and most likely criminal behavior (armed robberies). For their part, they are suspicious of the newcomer nephew, but Smurf says he's "blood" until proven otherwise. J makes an attempt to find his father, but realizes he has nowhere else to go.

After Moder shot the pilot, Yaconelli came in to shoot the season's remaining nine episodes. She started out 10 years ago as a first assistant, quickly became an operator (*Heroes*, *Brothers and Sisters*, *In Plain Sight*) and then transitioned into A-camera operator and 2nd unit cinematographer on such shows as *Glee*, *Intelligence* and *Ray Donovan*. After

she was brought on as director of photography for season 5 of *House of Lies*, that show's 1st AD, Gary Goldman, recommended her to Wells for *Animal Kingdom*. "They saw my reel, met with me and then hired me," she says.

Yaconelli says Wells and executive director Chris Chulack, who directed the second episode, wanted the look to be as gritty and naturalistic as possible. "They didn't want it to feel like it was lit, but it still had to be stylistic and look good," she says. The team decided to shoot with anamorphic lenses on the pilot to create a more filmic look, and Yaconelli continued with that look for the rest of the episodes.

"We're using the [ARRI] Alexa Plus," she says. "It's a great camera and has a fantastic amount of range. And I have a wonderful set of lenses, the G Series anamorphic prime lenses from Panavision. We get incredible flares. The way the light behaves when it hits the lens, things that people might consider a flaw, is really wonderful."

Yaconelli says she uses prime lenses for nearly everything. "I think we used the 3:1 once," she explains. "We're staying wide, close and handheld, right with the actors. The camera work feels like a character in the story."

The show is operated mostly handheld, says Yaconelli, who praises the work of Simon Jays as A-camera and Steadicam operator. She notes that the production team occasionally uses an Alexa Mini on the show. "If we get into a fight scene, with the Alexa Mini we're able to handheld and be very



Finn Cole, Scott Speedman, Ellen Barkin, Shawn Hatosy, Jake Weary and Ben Robson star in TNT's *Animal Kingdom*.



Ellen Barkin as family matriarch Janine "Smurf" Cody  
PHOTO BY EDDY CHEN



Scott Speedman as Baz, Smurf's relatively level-headed right-hand man



PHOTO BY EDDY CHEN



Jake Weary as Deran, the "baby" of the family

PHOTO BY EDDY CHEN



PHOTO BY EDDY CHEN

free within the scene." She adds that she occasionally uses a Sony a7R II on a bicycle rig, "but 90 percent of the time it's the Alexa."

The Cody family home, one of the main sets, was built on the stages at Warner Ranch in Burbank. "The house is a hub and meeting place for the whole show," says Yaconelli. "They built it with a pool, glass walls and everything." She says it's been a learning curve to light the house. "The challenge is to get light inside of it. I've had to put a large light outside every window, and I have two fly swatters to control some of the sun as it moves over the large pool. It's turning out really well."

A number of scenes take place in the pool. "We shot an entire sequence underwater," she says, noting that underwater camera operator Tom Boyd placed the camera in a HydroFlex housing. "For pool work, we've done a bit of hothead work on a jib arm," she says. "But they didn't want us to use fancy tools. They didn't even want Steadicam. Every time we've used a Steadicam, it's as a one, to have a departure from the look of the rest of the show."

The lighting kit has included some big lights for use at the Cody house. "I have a 60-foot Condor with an ARRIMAX," Yaconelli says. "There have been a few scenes where they wanted us to make it dusk, and the ARRIMAX has been great for imitating the sunset. We're really trying to embrace the contrasts, playing a lot in silhouette and being edgy in terms of nothing being too lit. We do have to light the actors a bit, but I'm mostly lighting from outside the set in. In the daytime, we use the light from outside, no practicals, and let everything fall off."

The production also shoots on location in Oceanside, just north of San Diego. "We drove up last Sunday night and had an 8 a.m. call on Monday morning," she explains. "We've stayed here all week and then we're back to the stage on Monday."

It's at this location that the production team goes skydiving, at a sky jumping school at the Oceanside airport. "We did some of the sky diving

sequence on the ground," says Yaconelli. "I'll be inside the plane, tethered to the cockpit side and pointing out the back when the jump doors open. I'll have a camera on a bungee rig that will also be tethered."

One of the most interesting and challenging scenes thus far, says Yaconelli, was to shoot inside an actual working foundry. "It was this incredible scene with Scott and Ellen where they walk into a foundry and hand over a box that gets melted in this pit of molten steel," she says. "It was a live foundry and very dark inside, and it was hard to get lights in and work around it. Every 30 minutes they did a pour, so we also had to time our shooting around that. But the end result is incredible—something you wouldn't get anywhere else."

Another challenge has been the speed of production. Yaconelli says they shoot eight-day episodes, with one of the days in Oceanside. "It's about not being too slick," she says. "They like the idea of being messy and working as quickly as possible. We definitely work quickly. It varies, but we've done as much as nine pages in a day."

Yaconelli says that even with the show's many demands, tight schedule and challenging locations, shooting *Animal Kingdom* has been nothing but fun. "There's what you do with all the time in the world, and then there's doing what you can with the time you have," she says. "There's a lot they want to achieve, and it makes us work a little differently, be quick on our feet, be proactive, not reactive, and be true to the style and look of the show." **dv**



Cinematographer Loren Yaconelli in plane



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### Chad Lancaster

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### Raymond Singer

#### Actor, Editor, Cinematographer, and Award-Winning Screenwriter of Disney's Mulan

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## PORTRAIT OF THE ARTIST AS A YOUNG WOMAN

Documenting the Innovation and Influence of Eva Hesse

**T**he documentary feature *Eva Hesse*, which follows the life of the pioneering mid-20th century artist throughout the rise of her career, marks the feature film debut of director Marcie Begleiter. Produced by Karen S. Shapiro (*Beat the Drum*) and Michael P. Aust (*Pommes essen*), the Zeitgeist Films release premiered at Film Forum in New York in April.

*Eva Hesse* charts the artist's life from her escape from Nazi Germany at age 2 to her emphatic break with Minimalism, followed by her tragically early death from a brain tumor at age 34, and her posthumous celebration as one of the most important artists of the second half of the 20th century. A German-born American artist who quickly rose to fame in the 1960s New York art scene following more than 20 group shows and a cover article in *Artforum* magazine in 1970, Hesse died that same year. And although only a single solo show of her sculpture was staged during her short life, subsequent years have seen multiple retrospectives. Her work has been added to the permanent collections of museums including the Whitney, Hirschhorn, Pompidou in Paris, London's Tate Modern and MoMA in New York.

The partially Kickstarter-funded project, which raised more than \$66,000 from 468 backers, was shot by cinematographer Nancy Schreiber, ASC, and assembled by editor Azin Samari.

Schreiber says of working with Begleiter, "Because of Marcie's background in the arts, as well as her being a professor and author, I was intrigued by the project and knew it would be a very fruitful and creative collaboration."

Samari used Avid Media Composer to edit *Eva Hesse*, which interweaves archival footage shot by German filmmaker Werner Nekes when he was still a student with material from Hesse's unpublished journals (with voiceover narration by Selma Blair), newly uncovered still photographs, and selections from nearly 60 hours of interviews



Eva Hesse in Textiel Factory Studio, Kettwig, Germany, 1964

with art world luminaries including artists Dan Graham, Richard Serra, Carl Andre, Robert and Sylvia Plimack Mangold, and Nancy Holt. Nicholas Serota, director of the Tate museums, Whitney curator Elisabeth Sussman and writer Lucy Lippard, all of whom curated important Hesse exhibitions, also appear in the film, along with beautifully lit shots of Hesse's work.

"I keep returning to Avid 6.5.4, partially because of compatibility issues with Mac operating systems, but mainly because of the ScriptSync feature, which I heavily rely upon for documentary projects," Samari comments. "It's an invaluable feature—you can just open a transcript, type in a specific keyword, and then bring up that frame of that interview. It would have taken much longer to do the same work without that tool."

Schreiber initially opted to use a Sony PMW-F3 digital camera outfitted with Cooke 18-100mm lenses to capture seated interviews for the project, which spanned more than four years and three generations of cameras before it was completed. For footage of the art itself, Schreiber employed an older Angenieux HR 25-250mm lens along with a macro lens or diopter on the zoom lens to get close-up shots of the materials Hesse used in her work.

Working with camera houses Birns & Sawyer in Los Angeles, TCS in New York, Dausenbach Camera in New Mexico, and a range of vendors in the U.K. and Germany, Schreiber occasionally also used a Fujinon Alura 18-80mm T2.6 zoom lens and various prime lenses coupled with a light Schneider Classic Soft filter or Tiffen Glimmerglass, depending on the interview subject.

Because they were shooting fine art in museum settings, the production team wanted to employ the best cameras it could afford, but they needed to avoid the high cost of storage a 4K workflow can entail. In the end, Schreiber shot in 2K, pairing the Sony F3 with AJA Video's Ki Pro Mini as an external recorder in order to capture 10-bit 4:2:2 S-Log footage. "I liked the color of the F3," she recounts. "I had worked with it before, and it was small enough to take into people's studios and more affordable than the [ARRI] Alexa, which I most often shoot with when I'm shooting digital. At that time the F3 was the perfect choice."



Director Marcie Begleiter and cinematographer Nancy Schreiber discuss shooting Hesse's "Untitled (Rope Piece)," 1970, at the Whitney Museum of American Art

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Shooting "Repetition 19" at the Hamburger Kunsthalle

Then, as camera technology changed, in 2013 Schreiber began using the Sony PMW-F5 CineAlta digital cinema camera and, when it became available, the Sony PMW-F55 CineAlta 4K digital cinema camera. "We had to sort of dumb down the F55 because we couldn't afford 4K and the external recorder," she laughs. "I shot with SxS cards in 2K and was very pleased with the result."

When shooting interviews with artists inside studio settings, Schreiber sought a look that would match the quality of the artwork footage. "My biggest challenge became the white walls," she relates. "White walls, skylights, windows with uncontrollable sun and a lot of daylight. That was a major challenge because I wanted the look to be controlled. I spend a lot of my life shooting features and television, so lighting and control are very important to me. Also, because it's a film about art and artists, who are very controlled in their work, I wanted the look of the interviews to have that same control."

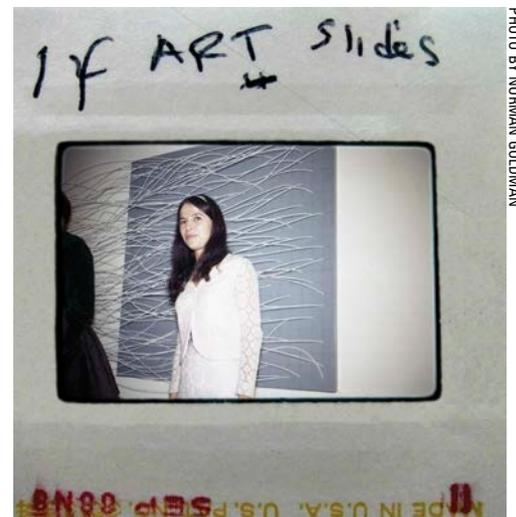
Schreiber describes her lighting approach as directionally soft. "I came up as a film electrician and gaffer, so lighting has always been important to me, whether it's natural or created, or some combination," she says. "And you can do so much with very little these days. The cameras are very fast, so most often it becomes about taking the light away."

To shoot the artwork itself, Schreiber used

low-temperature lights to avoid subjecting the pieces to excess heat. "One had to be very careful about hitting her work with light," Schreiber recalls. "In fact, when we went to the Whitney to shoot 'Connections'—a glistening, golden piece with looping strands that cast a shadow on the wall—I could only turn on the lights for a very short period of time."

Employing a small dolly to capture footage of the artwork, Schreiber lit the sculpture with hard lights for brief seconds at a time. "I didn't leave the piece lit for all that long so I know I didn't damage it," she states emphatically. "But I felt that her work had to be lit in a three-dimensional manner. Even on the wall her work was three-dimensional, with the pieces emerging from the wall. I felt that was so interesting and I wanted to show the 3D nature of it, that it wasn't just a 2D painting on a wall."

Asked which parts of her toolkit are the most essential, Schreiber responds, "My eye and my heart." The cameras are just tools, she insists. "I like the Alexa because I worked with a lot of ARRIFLEX and Panavision film cameras coming up, and it's a lot like a film camera. I like the color of the Alexa, its ease of use and the intuitive menus. Having said that, I have shot many movies using various generations of the RED [camera] and they all look great. There are so many cameras today: the [ARRI] Alexa Mini; the Panasonic VariCam 35, a 4K camera that I find quite wonderful and



Eva Hesse at the opening reception for *Eccentric Abstraction* in 1966

quite ergonomic; the even newer Panasonic VariCam LT, which I'm very excited about; and finally the [Sony] F65, which is large but produces beautiful imagery. Sony now has the [PXW] FS7 [XDCAM], which is a smaller affordable camera but still very professional, and I've liked using it for documentaries. I've also used the Canon [EOS] C300 and C500.

"Basically, I'm camera-agnostic," Schreiber says. "I still love film when it's appropriate, but it's not always appropriate or affordable. It's just a camera, so it's what you do with it and what makes sense for your production that's important. It's just a choice, and we have a lot of choices these days." **dv**

PHOTO BY NORMAN GOLDMAN

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NEIL MATSUMOTO

# BEAUTY AND INSANITY

Natasha Braier Brings *The Neon Demon* to Lurid Life



Elle Fanning in *The Neon Demon*

**C**o-written and directed by Danish filmmaker Nicolas Winding Refn (*Drive*, *Only God Forgives*), *The Neon Demon* explores our society's current obsession with beauty. Aspiring model Jesse, played by Elle Fanning, arrives in Los Angeles and her ethereal beauty and energy take the fashion world by storm. That is until a group of jealous—and ravenous—models try to stop her ascent by any means necessary. The beautifully shot digital film also features

Jena Malone, Bella Heathcote, Abbey Lee, Keanu Reeves and Christina Hendricks. "With *The Neon Demon*, I wanted to create a funny, beautiful, violent, sexy, melodramatic, titillating teen horror film, but without the horror," Refn said in his director's statement. "This idea had been simmering in my brain from the time I started making films, but it was my beautiful wife who inspired me to turn it into a story about beauty and insanity, resulting in a very visceral experience."

*The Neon Demon* was shot by Argentinean-born cinematographer Natasha Braier (*The Rover*, *The Milk of Sorrow*). At 16, Braier started out as a still photographer, then discovered the role of the director of photography while at the cinema. After moving to Europe with her family, she studied cinematography at the National Film and Television School in London. "When I graduated, I had done maybe 15 short films," explains Braier. "I put together a reel and started looking for an agent."



Elle Fanning

From there I started working as a cinematographer on smaller productions, moving my way up.” In 2013, Braier was featured as one of *Variety* magazine’s “10 Cinematographers to Watch” and has recently shot commercial campaigns with directors Mike Mills, Roman Coppola, Vince Squibb and Frank Budgen.

*The Neon Demon* was Refn’s first collaboration with Braier, who was recommended to him by colleagues. “I went to his house and met him,” says Braier. “From that first interview, we immediately clicked and were on the same wavelength. I got the job two hours after that.”

During their two-month prep, Refn and Braier did not have a philosophy of what the film should look like, nor had they selected any movies or photos for style references. Instead, Refn gave Braier and other crewmembers a list of movies to watch, selected not for their photography but for the mood they evoked. The list included Roman Polanski’s *Rosemary’s Baby*, Dario Argento’s *Suspria*, Stanley Kubrick’s *A Clockwork Orange*, Russ Meyer’s *Beyond the Valley of the Dolls* and several short films by Kenneth Anger. “They were more to get the feeling of an atmosphere and mainly a statement that this was going to be a very strange movie,” says Braier. “There was nothing specific from one movie to the next. It was more like, watch these movies and welcome to the trip.”



Director Nicolas Winding Refn

Refn typically stocks his films with a diverse soundtrack. He gave Braier a music playlist ranging from electronic music from the 1980s to Brian Eno. According to Braier, the music served the same purpose as the films they watched: to help build moods and feelings. “The same music he gave me as a playlist—which I was playing in my car every day while driving to set—was music he was playing often while we were filming,” she says. “He would play it from his iPhone or on a little speaker so the music would be in the background. It would help the actors and the crew to really feel the flow from

the music.”

Braier shot *The Neon Demon* with the ARRI Alexa XT in anamorphic format, capturing ARRIRAW files with the XT’s Open Gate sensor mode (3414 x 2198). “Nicolas wanted to shoot the film in digital, and for me the Alexa is the best camera for skin tones, so there was no doubt,” Braier says of the camera selection process.

Braier knew she had to have the right lenses to capture a film about beauty. After weeks of searching, she ended up with vintage Cooke Xtal Express anamorphic lenses. Xtal Express lenses are

Cooke S2 and S3 spherical lenses from the 1930s and '40s that were rehoused and modified with anamorphic elements by Joe Dunton Cameras in the 1980s.

"All of the movies that were references from the '60s or '70s have this timeless feel to them, so we wanted our movie to feel like that, instead of a fashion commercial," explains Braier. "It was important to have old lenses that would bring this timeless quality to the movie, as well as be more flattering. We did a lot of work in finding them and we were very lucky to get one of the last few sets. We had Panavision work on them a bit to get the best quality for the faces, but also to keep their original aberrations and flares."

According to Braier, the Xtal Express lenses are softer than current Hawk V-Lites or ARRI/Zeiss Master Anamorphic Primes and have a gentler, more organic feel. She shot with a 40mm or 50mm for the majority of the film. In terms of exposure, she tried to shoot at an *f/4* because it was the widest position at which she could obtain sharp definition on the eyes. "I wanted to have depth of field but I also wanted to be sharp enough on the big screen," she reveals. "Sometimes at night I didn't have enough light, so of course I was shooting them wide open at *f/2.8*."

"I usually have diffusion on the lenses, but because we were already using these soft lenses, I shot clean with no diffusion," she continues. "Also, with anamorphic, it's like adding another level of softness because backgrounds get more out of focus. I didn't feel it needed anything on top of that."

The lighting challenge on *The Neon Demon* came



from the production's limited budget. According to Braier, Refn told her when she was hired that they had \$5 million to do the movie but it had to look like \$30 million. Would she be able to do that? "I said yes, and I had to make it look like that every day with three electricians and three grips," says Braier.

"I had an amazing crew that worked very hard. Every day was a challenge," Braier continues. "Probably the trickiest thing for us was a party scene at the beginning of the movie. We shot the whole movie in chronological order because that's the way Nicolas works. This party scene was probably our biggest scene for lighting because it was the biggest location and there are a lot of lights with changing colors. It was our second day of shooting, when you're just warming up,

and suddenly we had a huge scene where we are using all of the lights from the truck and all the people. It involved a lot of Sputnik lights and a lot of LED panels backlighting the girls as they walked. Everything I had, I used in that scene."

With a title like *The Neon Demon*, color would obviously be a major factor on the film. "Nicolas really loves color, but I had no idea I was going to use so much of it," says Braier. "It was great how much Nicolas pushed me to explore color. Because the film was shot chronologically, the look really began to evolve, and I grew with it. I worked a lot with LED panels that could output different colors. I also did a lot with the Sputnik lights, which are LED units that can be put together like Legos to make a big light. LED lighting has become more useful these days because it's very easy to try out different colors without having to change gels on lights."

It was important to Braier that they try to capture everything in camera because the project didn't have a huge postproduction budget. She and DIT Lawrence Razo created LUTs and applied the look to all on-set monitors so Refn would not have to look at flat Log C footage. "We knew exactly what the film would look like [when they would grade it six months later], and the final look ended up being very close to my intention."

Braier completed the color grade in Denmark over three weeks with Refn. Since she set her look in camera, most of the grade involved slight touch-up work and fine-tuning the contrast level. She estimates 90 percent of the finished movie was captured in camera.

*The Neon Demon* was released in theaters on June 24. **dv**



Refn and cinematographer Natasha Braier

# 2016 NAB SHOW Best of Show



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*Groundbreaking Broadcaster Solution Combines News Production and Master Control Into One System*

**B**itcentral Continuum™ is a ground-breaking solution for local news broadcasters, taking the content, advertising, and operations they already have and enabling a completely new market offering without requiring additional cost. Continuum bridges the most sophisticated news production technology (Bitcentral CORE:news™) with the most forward-looking master control technology (Bitcentral Central Control™) to allow for a breakthrough, automatically-programmed product for the broadcaster, without requiring any additional operational burden.

Continuum produces a 24/7 channel of news and other locally originated content which can be streamed to OTT and mobile. Continuum combines the production process for news and the monetization process for master control into one system, allowing broadcasters to leverage the content they already have along with local production, news, advertising and community interest items.

Continuum automatically produces a live linear channel (or channels) direct from a rundown, then distributes it to an unlimited number of subchannels for mobile, digital, and OTT.

The solution is not only tied to existing news production systems, automating the programming of the channels; it is also directly tied into existing traffic and billing systems, extending both the audience and advertising reach with existing assets.

The new linear live or pre-recorded channels enabled by Continuum give broadcasters a new extended audience and additional opportunities for advertisers to sponsor segments and content.

The newsroom processes to produce online content have been largely manual and labor-intensive. Continuum breaks new ground by combining Bitcentral's news and master control systems. News production is integrated with either ENPS or iNews on the front end, and master control is integrated with traffic systems like Wide Orbit on the back end, automating output a polished, 24/7 digital local news channel. With this technology, broadcast-

ers can reach greatly expanded audiences and advertising revenues without needing additional operations.

Because Continuum allows broadcasters to digitally deliver viewers a linear channel of news and advertising on any platform instead of the current model of playing individual videos with pre-roll advertising, Continuum enables producers to sell and manage their own advertising versus being dependent on internet-based ad servers.

The solution provides attractive profit potential because additional operational costs are not necessary and content can be potentially monetized through a subscription model.

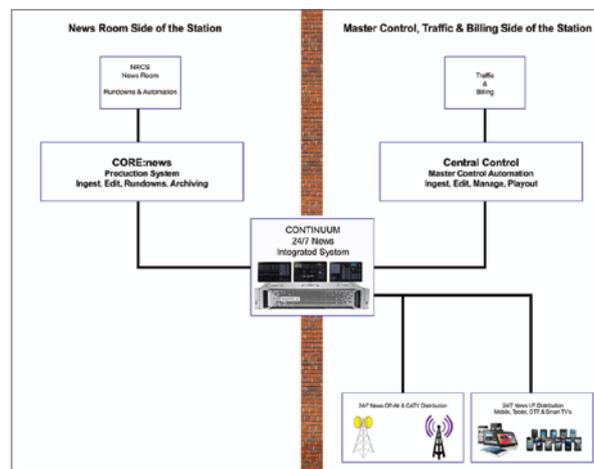
Building and maintaining a 24/7 News Channel has never been easier:

- Create a 24/7 rundown with Stories and advertising blocks, then attach content by simply dragging and dropping within the NRCS with Bitcentral integrated CORE:news Active Panel.
- Manage the Rundown by changing, rearranging, floating, and deleting stories, all without leaving the Active Panel within the NRCS.
- All of the advertising blocks are directly controlled via the existing traffic and

billing systems, while Continuum automatically keeps track of the system playout back-timing as all content is played out. This gives broadcasters the ability to produce content on the News Side and monetize all the different 24/7 news channels on the traffic and billing side with a completely automated system.

- As additional Stories are produced throughout the day, the 24/7 news channel can be fed with this content and the run and rerun order can be managed from within the NRCS.
- As live news is produced, Continuum will automatically record and segment the newscast along with providing a frame-accurate AD splice cut trigger for the go-to and come-back of all AD breaks.

Finally, broadcasters can satisfy the demand for live, local, linear news on digital platforms with ease and affordability. ■



# RESEARCH AND DEVELOPMENT

Blackmagic URSA Mini 4.6K Proves Worth the Wait



## Quick Take



**Product:** Blackmagic URSA Mini 4.6K

**Pros:** Compact, ergonomic, easy to use. Wide range of raw and ProRes codecs. Excellent skin tones and overall color science.

**Cons:** Menu access is only behind viewscreen door. Pricy CFast media. Menu choices are perhaps too basic and could be expanded. Just two channels of audio. No internal ND.

**Bottom Line:** This is an ideal camera for the indie filmmaker on a budget who wants to produce great images in an easy-to-manage package. The inclusion of DaVinci Resolve Studio adds \$1,000 in value and is the perfect adjunct for color grading.

**MSRP:** EF model \$4,995, PL model \$5,495

**Online:** [www.blackmagicdesign.com/products/blackmagicursamini](http://www.blackmagicdesign.com/products/blackmagicursamini)

Blackmagic's URSA Mini 4.6K finally shipped some 11 months after its introduction at the 2015 NAB Show. While Blackmagic has consistently announced ambitious shipping dates for its cameras, buyers took to the web in frustration over the URSA Mini and URSA Mini 4.6K delays.

In the April 2015 press release announcing the cameras, Blackmagic stated that the URSA Mini would have a global shutter, while the URSA Mini 4.6K would sport a hybrid global-rolling shutter, with rolling shutter kicking in over 30 fps.

In March of 2016, Blackmagic announced that the URSA Mini 4.6K was finally shipping. According to a company statement, delays were caused by problems implementing the global shutter in the camera. After describing the performance of the global shutter on the URSA Mini 4.6K as "not up to the high quality level that Blackmagic Design strives to give its customers," it said that the company had decided to ship the camera without that feature. It would have a rolling shutter instead, but with 15 stops of dynamic range and high frame rate capabilities.

The release went on to detail the engineering trade-off. "Originally URSA Mini 4K was intended to be the entry-level model and the URSA Mini 4.6K to be the higher-end model with more features. However, now these two cameras are targeted for different kinds of work as customers can choose

between URSA Mini 4K if they want global shutter for fast action sports and URSA Mini 4.6K if they want wide dynamic range for high-end digital film work."

Market positioning aside, that preface is necessary to demonstrate that a product that breaks a lot of ground is sometimes modified significantly between prototype and delivery stages.

URSA Mini 4.6K shares external and physical specs with the URSA Mini. Both have a lightweight and sturdy



Blackmagic URSA Mini



URSA Mini with handgrip

magnesium body that weighs 5 pounds with handgrip but without lens and battery. URSA Mini 4.6K features 12G-SDI connections, a 5-inch fold-out touchscreen monitor and side grip with camera control functions, as well as dual CFast card recorders and built-in stereo microphones.

The EF mount model offers full auto and manual control of EF lenses, while the PL model offers a sturdy PL mount. An optional B4 mount is user-installable and has a power adapter to draw camera power for lens operation. It ships with AC power adapter. The V mount battery adapter is a \$95 option. There are third-party power solutions from Anton/Bauer, IDX, Wooden Camera and others.

Blackmagic offers a \$395 shoulder mount and top handle kit with a padded shoulder piece, rosettes and 15mm rod slots. The top handle, also with secure mounting holes, integrates with Blackmagic's optional \$1,495 URSA Viewfinder or \$1,795 URSA Studio Viewfinder. Thus anyone wanting a full kit is looking at about \$7,000 plus media, lens and battery.

The URSA Mini 4.6K has dual CFast 2.0 card slots. CFast media remains relatively expensive, but prices have been dropping as more camera manufacturers adopt it. Still, at about \$650 for a 256 GB 3600x

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card and comparable prices for SanDisk, media needs to be considered when developing budgets.

My evaluation unit came with the V mount adapter, baseplate/handgrip/top handle and EVF. Assembly of the whole unit was quick, with superb instructions.

It sits very nicely on the shoulder, and the shoulder pad adjusts on a forward-backward axis to compensate for front-heavy lenses. The handgrip can mount either on the “dumb” side of the camera (the right) or on the extension rod. I found the extension rod to be too short and disliked that I had to loosen the rosette screw to adjust the angle. The handgrip itself is comfortable and offers start/stop, iris and focus buttons.

The camera shares Blackmagic’s simple and intuitive menu structure. Unfortunately, you can’t get to that menu structure without opening the viewscreen door. The exterior of the viewscreen has transport buttons, used for playback and iris control of EF lenses, as well as two function buttons yet to be implemented. Blackmagic certainly could have put a menu button on the outside and allowed menus to be accessed through the viewfinder, whose SDI interface can be configured in camera to display camera settings and menus.

The viewing options are all fantastic. The 5-inch built-in viewscreen has a resolution of 1920 x 1080 and is tack sharp. Brightness is easily adjustable via the simple, logical Blackmagic menu structure. The



URSA Mini with Studio Viewfinder



URSA Mini user interface

optional \$1,495 EVF rivals any comparably priced viewfinder on the market. It can pass through SDI camera info (or the camera can be set for clean SDI output from the front SDI port) and has its own options for peaking, guides and zebras. It slides into the top handle and can be adjusted on all axes. The SDI and power cables that connect to front ports on the camera are permanently attached to the EVF. You can look at that in two different ways. Either: they won’t come unplugged. Or: replacing a damaged connector requires a trip to the shop.

Blackmagic quotes a native ISO of 800 for the camera. I found shooting at 800 to be clean, and even pushing to 1600 had acceptable noise levels, depending on the situation. If you don’t like the apparent noise, Blackmagic includes a free license and dongle for Blackmagic DaVinci Resolve Studio with, among other features, greatly enhanced noise reduction capabilities in version 12.5.

Like all Blackmagic cameras, it has modes for shooting “film” and “video,” which translates into log and Rec. 709. There are “film” and “video” viewing options, which means either no viewing LUT (film) or a Rec. 709 viewing

LUT (video). I find the Rec. 709 viewing LUT a bit contrasty, but you could argue that the contrast aids in focusing. The LUT isn’t burned in, so it doesn’t really matter. Advertised dynamic range is 15 stops. Unscientific guessing on my part says that number probably isn’t far off.

The camera’s 4.6K translates to a top shooting resolution of 4608 x 2592. This “oversampled 4K,” as I would call it, samples nicely as DCI 4K. Frame rates range from 23.98 to 60 fps, including a true 24 fps.

As far as codecs, it shoots every flavor of ProRes from Proxy through 444 XQ. It shoots uncompressed CinemaDNG raw, and compressed 3:1 and 4:1 raw. The raw footage imports nicely into Blackmagic Resolve, which includes specific LUTs for the URSA Mini 4.6K.

There are two XLR inputs and two built-in cardioid microphones. The camera shoots just two audio channels, though. I’d like to see this expanded to four. While I’m making up a wish list, AES/EBU audio would be really great but probably not possible at the price point that BMD seeks to maintain.

Bottom line: this camera produces beautiful images. Particularly impressive with BMD’s color science is skin tones, which appear organic and natural. In all fairness, most cameras on the market today can give you a great image, and in the final analysis your audience isn’t asking about the camera make. But it seems that footage from a Blackmagic camera does not require as much work to become a great image as footage from other cameras.

All things considered, I strongly recommend the URSA Mini 4.6K for filmmakers looking for a camera to own. The wait was worth it. **dv**

### URSA Mini 4.6K Shooting Resolutions

- 4608 x 2592
- 4096 x 2304 (4K 16:9)
- 4608 x 1920 (4K 2.4:1)
- 4096 x 2160 (4K DCI)
- 3840 x 2160 (Ultra HD)
- 3072 x 2560 (3K anamorphic)
- 2048 x 1152 (2K 16:9)
- 2048 x 1080 (2K DCI)
- 1920 x 1080

# PORTABLE PERFORMANCE

## Is the iPad Pro Viable as a Professional Video Tool?

Mark me down as a happy Apple iPad user. It's my go-to computer away from home, unless I need to bring my laptop for on-site video editing. I've even written some magazine stories, like my NAB Show reports, on it. While I don't consider myself a post-PC computer user, I imagine that if I didn't need to run tools like Blackmagic Resolve, Apple Final Cut Pro X and Adobe Premiere Pro, an iPad Pro could function as my only computer.



iPad Pro 9.7"  
12.9" and Apple Pencil

For this review, Apple loaned me a 12.9" 128 GB Wi-Fi + Cellular iPad Pro at the start of the year. It came with all the bells and whistles, including Apple Pencil, a Lightning to SD Card Camera Reader, case, Smart Cover and Smart Keyboard. The Pro's A9X processor is beefy for a tablet. Other reviewers have noted that its performance rivals Apple's smallest MacBook with the Intel Core M CPU. Since the iPad Air 2 processor (A8X) is only one step down, you won't see that much difference between it and the iPad Pro on most iOS applications. However, the A9X delivers twice the CPU and graphics performance of the Air 2's A8X, so there is a difference in driving the larger 12.9" Pro screen, as well as with multitasking and animation-heavy applications.

Many specs are the same between these two models, with the exception that the iPad Pro includes four speakers and adds a Smart Connector, to be used with the optional Smart Keyboard. In addition, the Pro's touchscreen has been re-engineered to scan at 240 times per second (twice as fast as scanning for your finger) to support use of the Apple Pencil.

On March 21 Apple launched a second iPad Pro model, which uses the same 9.7" form factor as the iPad Air 2. Other than screen size, the two Pro models sport nearly identical specs, including A9X processor, four speakers and Smart Connector. There's a Smart Keyboard specifically designed for each model. Since I tested the larger version, the rest of this review is in the context of using the 12.9" iPad Pro model.

The hallmark of iOS 9 is multitasking, which lets

### Quick Take

**Product:** Apple iPad Pro

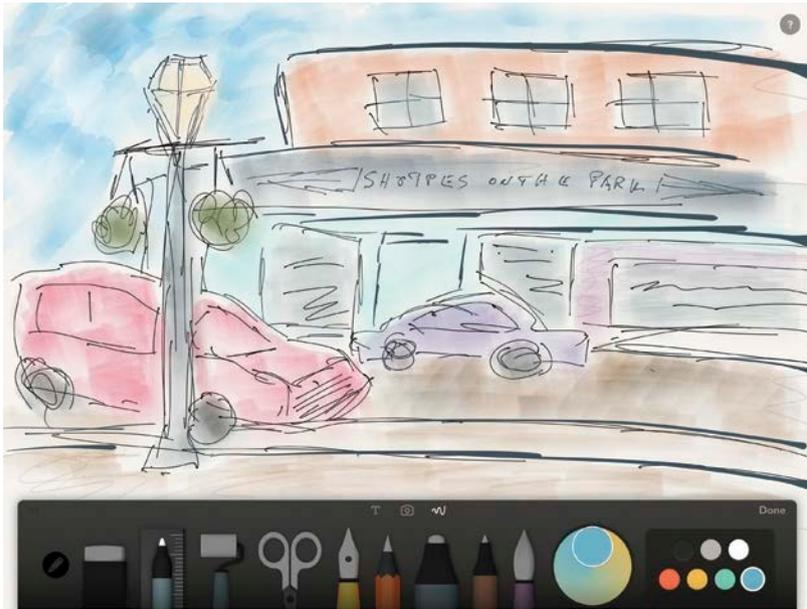
**Pros:** Fastest processing of any Apple mobile device, rivaling entry-level computers. More precise touch resolution. Specialty peripherals optimized for the iPad Pro models.

**Cons:** Not all applications seem optimized for the larger screen. Better file I/O and file structure is needed for more advanced applications.

**Bottom Line:** While the standard iPad is a device suitable primarily for media consumption, improvements found in iPad Pro, especially the 12.9" version, make it appropriate for media production as well. The larger screen is ideal for tablet-based drawing and lightweight video editing.

**MSRP:** 9.7" model from \$599, 12.9" model from \$799

**Online:** [www.apple.com/ipad-pro/](http://www.apple.com/ipad-pro/)



The Apple Pencil shines when used with FiftyThree's Paper app for drawing and sketching.

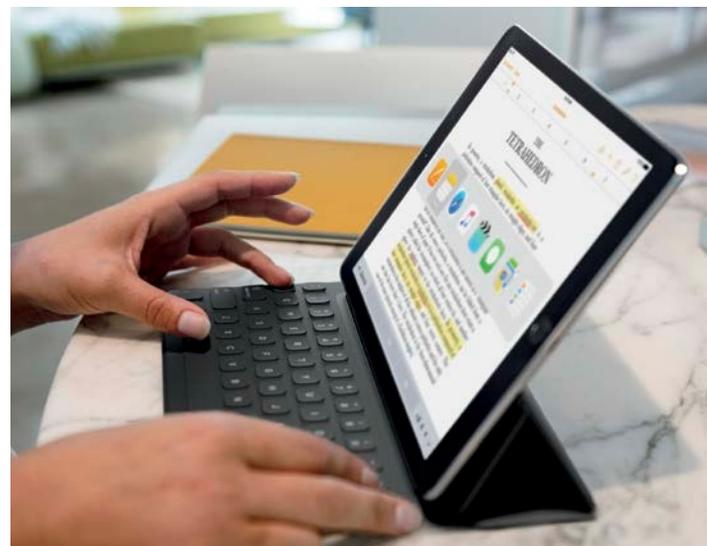


FiLMiC Pro turns the iPad's built-in camera into a professional image recording device.

you run two applications simultaneously, side by side on the screen. You can go between them, slide the divider bar to change the width of each app's window or move them completely off the screen. This feature is superb on the larger iPad Pro, owing to the extra screen real estate. It's not quite as functional on the other iPads. However, many applications and web pages don't seem to be fully optimized for the larger screen of the iPad Pro. It often feels like pages are slightly blown up or that there's a lot of wasted space.

## ACCESSORIES

The iPad Pro starts to stand out once you accessorize it. You can get an iPad Pro Silicone Case, iPad Pro Smart Cover and/or Smart Keyboard. The covers magnetically attach to the iPad, so be careful. If you hold or lift the heavier iPad Pro by the cover, it can detach, resulting in the Pro potentially dropping to the floor. Both the Smart Cover and the Smart Keyboard can fold into a stand to prop up the iPad Pro on a desk. When you fold the Smart Keyboard back into a cover, it's a very slim lid that fits over the screen. The feel of the keyboard is OK, but I prefer the action of the small standalone Apple Bluetooth keyboard, which I use with my own iPad. Other reviewers have expressed a preference for the Logitech keyboard available for the Pro. These new keyboards connect to the iPad Pro via the Smart Connector, which offers two-way power and data transfer, meaning that the keyboard does not require a battery.



iPad Pro with Smart Keyboard

The new Apple Pencil is getting the most press. Unlike other pointing devices, the Pencil requires charging and can be paired only with the iPad Pro. Pencil is a blast to use with Pixelmator or FiftyThree's Paper. It's nicely weighted and feels as close to drawing with a real pen or pencil as you can get with an electronic stylus. It is pressure-sensitive and you can even shade with the side of the tip. For drawing, in apps like Photoshop Express, Autodesk Graphic and Lucky Clan ArtStudio, the Pencil is clearly superior to low-cost third-party styli or your finger. FiftyThree also offers its own drawing styli that are optimized for use with the Paper app.

The final accessory to mention is the Lightning to SD Card Camera Reader. The Lightning port supports USB 3.0 speeds on the iPad Pro, making

transfers fast. Plug the reader into the Lightning port and pop your SD card into the reader. The Photos application will open to the contents of the card and you can import a selection of clips. Unfortunately, there is no generic way to transfer files from an SD card onto the iPad. I've been able to cheat it a little by putting some renamed H.264 files into the DCIM folder structure from a Canon EOS 5D camera. This made everything look like valid camera media. Then I could move files into Photos, which is Apple's management tool for both camera stills and videos on the iPad. However, it doesn't work for all files, such as graphics or audio tracks that you might use for a voiceover.

## USING THE IPAD PRO AS A PROFESSIONAL VIDEO TOOL

Is the iPad Pro better for the video professional than other tablets and iPads? Obviously the bigger screen is nice if you are editing in iMovie, but is there more to it than that?

I worked with a number of applications for this review. FiLMiC Pro (\$9.99), for example, adds real camera controls to the iPad's built-in camera, including ISO, white balance, focus, frame rates and stabilization controls. It was used in the production of the hit Sundance film *Tangerine* (shot on an iPhone 5s) and is a must-have tool if you intend to do serious captures with any iOS device. The footage looks good and H.264 compression (starting at 32 Mb/s) artifacts are not



The iMovie app that comes with iOS is great for editing material designed to start and end on the iPad.



TouchEdit is a professional NLE designed for the iPad.

very visible. Unfortunately, the app doesn't offer shutter angle control to induce motion blur, which would smooth out the footage.

To make real production viable, you would need camera rigging and accessories. The weight of the 12.9" iPad Pro makes it tough to shoot steady handheld footage with it. Outside in bright daylight, the screen is too dim even at its brightest setting. Having some sort of display hood is a must. (The same criticism applies if you are trying to draw on the iPad Pro outside.) Nevertheless, if you mounted an iPad or iPad Pro in some sort of fixed manner, it could be very useful for recording interviews and on similar controllable productions. iOgrapher produces some of these rigging items but does not yet support the iPad Pro.

For video editors, the built-in option is iMovie. It is possible to edit external material if you bring it in via the card reader, Dropbox, iCloud Drive, or by syncing with your regular computer. (Apple's suggested transfer path is via AirDrop over Wi-Fi or Bluetooth.)

Once you've edited your piece, you can move the project file from iOS iMovie to iMovie on your computer using iCloud Drive and then import that project into Final Cut Pro X. In my tests, the media was embedded into the project and none of the original timecode or file names were maintained. Frame rates were also changed from 29.97 fps to 30.0 fps. If you intend to use this path, it's best for video originated on the iPad itself.

If you want a professional nonlinear editing tool for the iPad, nothing even comes close to TouchEdit, an app developed by feature

film editor Dan Lebental, ACE (*Ant-Man*, *Iron Man*, *Cowboys & Aliens*), and his team. TouchEdit includes many of the tools an editor would expect, such as trimming, titles and audio mixing, plus it tracks all of the important clip metadata. There is a viable workflow to get clips onto—and an edit list and/or movie out of—the iPad.

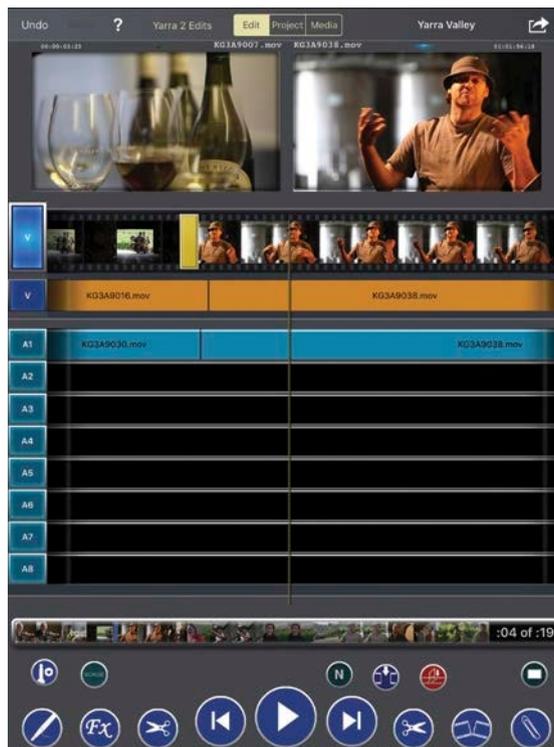
Lebental started with a skeuomorphic interface design that borrows from the look of a flatbed editor. The newest version of the software

includes the option for a flattened interface skin, plus a portrait and landscape layout, each of which enables somewhat different capabilities. TouchEdit is attractive as an offline editing tool that definitely benefits from the larger size and improved performance of the iPad Pro.

## FINAL THOUGHTS

I used the 12.9" iPad Pro for three months. It's a wonderful tool, but also a mixed bag. The more ample screen real estate makes the 12.7" easier to use than the 9.7" iPad models, but the smaller device is tweaked so that many pages are displayed a bit differently, making the size advantage of the larger Pro model less pronounced. The Pro uses the same iOS 9 operating system as all the other iPads and iPhones, which holds the Pro back. iPad Pro is begging for some sort of hybrid "iOS Pro" operating system that would make the iPad Pro work more like a laptop. Naturally, Apple's position is that iPads are "touch-first" devices and iOS a "touch-first" operating system. The weakest spot is the lack of true file I/O and a visible file structure. You have to go through Dropbox, iCloud, Photos, AirDrop, e-mail, or be connected to iTunes on your home machine.

If an iPad serves your needs and you can afford the top-end version, then the Pro is for you. Its target market is self-defining. The iPad Pro is a terrific step up in all the things that make tablets the computing choice for many. Depending on your needs, it's a great portable computer. For the few who are moving into the post-PC world, it could even be their only computer. **dv**



TouchEdit features landscape and portrait modes with a choice of interface skins.

# RECORD, MONITOR, REPEAT

Improved Production with Video Devices' PIX-E5



## Quick Take



**Product:** Video Devices PIX-E5

**Pros:** Solid construction. High screen quality. Records all flavors of ProRes. Extensive, easily navigable menu structure. PIX-LR audio option. Compact size. Robust media.

**Cons:** No DNxHD recording. No raw recording. Audio input without PIX-LR option is only via 3.5mm mini jack.

**Bottom Line:** The top product in its class for small monitor/recorders. It may have some format and codec limitations, but for those shooting today's small cameras, it is an ideal solution for ProRes recording and clear, accurate monitoring.

**MSRP:** \$1,395

**Online:** [www.videodevices.com](http://www.videodevices.com)



Sound Devices has been so successful in its PIX line of on-camera and studio solid-state monitoring/recording devices that the company spun off a separate product line called Video Devices.



Sound Devices PIX-E5 recording field monitor

While other manufacturers were releasing on-camera products with varying capabilities, Sound Devices seemed missing from the party, with only the venerable PIX 220i and 240i in production. The 2015 NAB Show saw the introduction of the PIX-E series, consisting of the PIX-E5, E5H and E7 monitor/recorders. These products garnered awards from a variety of publications.

But like so many products, we had to wait until summer or autumn of 2015 for shipment. And owing to its popularity, we had to wait even longer for our review loaner.

It was worth the wait. The PIX-E5 arrived in its kit configuration, consisting of the recorder, cables,

two batteries and charger, AC power, articulating arm, sunshade and two SpeedDrive enclosures, one populated with a 240 GB mSATA SSD. And all neatly packaged in a custom-configured hard case.

The E5H differs from the E5 in the following areas: the E5H is HDMI only instead of HDMI and SDI I/O; it has six audio tracks as opposed to eight; and the highest-quality codec supported on the E5H is ProRes 422 HQ, as opposed to 4444 XQ on the E5.

The E7 sports a 7-inch display with 1920 x 1200 resolution, in contrast to the E5/E5H's 5-inch 1920 x 1080 display. The E7 features a second SDI in and another BNC connection for LTC in. All other controls and features are identical.



Left and right views of PIX-E5

All of the E Series models record 1080 signals up to 120p and 4K signals (UHD and DCI) up to 30p.

The PIX-E5 lends itself to today's generation of DSLRs, mirrorless cameras and smaller video cameras. Weighing about 1 pound without batteries and measuring 5.4" x 3.4" x 1.6", the E5 feels solid and well-constructed. Its die-cast aluminum chassis and Gorilla Glass IPS panel screen can withstand a tumble without damage. The left side of the unit has two full-size BNC and HDMI inputs. Power options include a choice of two Sony-L batteries, 10-34V external DC or optional AC adapter. There is an SD card slot on the right side.

Among the greatest innovations of the PIX-E series is SpeedDrive, a USB 3.0 enclosure barely larger than a thumb drive that houses an mSATA drive. SpeedDrive streamlines the file delivery process by eliminating the need for card readers or docking stations. When connected to the rear of any PIX-E monitor, the SpeedDrive's USB 3.0 interface automatically switches to a SATA interface. Once recording is complete, users simply remove it from the back of a PIX-E and plug it directly into any USB computer port to transfer data at USB 3.0 rates.

Users may purchase a 240 GB SpeedDrive or an enclosure-only version into which they may fit any capacity of mSATA drive. mSATA drives are available in capacities up to 1 TB, with 1 TB drives topping out under \$400.

The SpeedDrive locks securely on the rear of the PIX-E and there is a release switch to unlock the drive, so there's no chance of accidental drive removal.

The PIX-E is operated by menus as well as



SpeedDrive is a removable mSATA drive that mounts securely on the rear of the PIX-E5.

buttons, which are positioned below the screen. In describing this as a "best of both worlds user interface," Video Devices notes that some functions are better controlled by touchscreen—for example, when interacting directly with a specific area of the displayed image, such as zooming in to a point of interest with TapZoom. Buttons, on the other hand, let the operator locate a control without looking and provide a tactile response to leave no doubt that a function has been activated.

Let's start with menu structure. Anyone who has used PIX recorders before will be familiar with the menu structure. Press the menu button, use the dial on the lower right to scroll through choices, press the button again to make a selection.

PIX-E5 does not detect input automatically, so the first step must be selecting SDI or HDMI input. While it can perform automatic recognition of progressive or PsF input, there is also a manual option. Metadata options allow custom file naming and reel naming conventions. Codecs range from ProRes Proxy to ProRes 4444 XQ. At the 2016 NAB Show, Sound Devices announced that a firmware update for the PIX-E Series was adding the H.264 codec and the ability to simultaneously record a ProRes file and an H.264 MP4 file. The update (v3.00) became available to users in late May.

With PIX-E5's dual recording capability, ProRes is recorded to the SpeedDrive and H.264 is simultaneously recorded to an SD card. While recording 4K in ProRes, the monitor will automatically scale the 4K to 1080p for recording H.264, thereby reducing its file size.

The PIX-E ships with several LUTs for popular log formats, including Sony S-Log2, S-Log3 and Canon Log. User LUTs may also be loaded via



A recent firmware update added the H.264 codec and the ability to record ProRes and H.264 files simultaneously.



Optional PIX-LR audio interface

SD card or by placing them in a LUT folder on the SpeedDrive's mSATA card. Only four LUTs at a time are available for selection, and those four LUTs may be selected from the LUT menu on the PIX-E. Selecting which monitoring LUT to apply is another innovation of the PIX-E, which carries into other button selections. Use the LUT menu to determine which LUT is assigned to positions 1, 2, 3 or 4. Then press the LUT button to invoke a LUT. Press and hold the LUT button for a second or two and then selections appear at the bottom of the screen. Select the viewing LUT by tapping with your finger or scrolling with the right-hand dial and pressing the button for selection.

Other buttons work the same way. The buttons below the display control false color, zebra, four-way (image, histogram, waveform, vectorscope), waveform, vectorscope, histogram, LUT, TapZoom (2x/4x), peaking and markers. A long press on each of these brings up a range of options for each function. False color allows for either four or 12 colors. The monitor's waveform modes are luma (white), luma (green), RGB overlay and RGB parade. Likewise, vectorscope and histogram have options. The intensity of the scopes can be adjusted via the PIX-E5's right-hand dial.

The device's TapZoom functionality is invoked by tapping on the screen. Tapping zooms either 2x or 4x, depending on how the function is configured via the zoom soft key. Area of interest can be located simply by panning around the screen with your finger. In four-way mode, tapping any of the quadrants brings that quadrant to full screen.

The IPS panel is a delight to view. Brightness is 500 nits, with a 1000:1 contrast ratio and 179° angle of view. With the optional sunshade, it holds up as well in sunlight as any similar panel would. The colors are vibrant and the image is sharp. The combination of the sharp IPS panel and peaking ensure accurate focusing.

Another nice feature is that the scopes measure the actual display—LUT-ed or not.

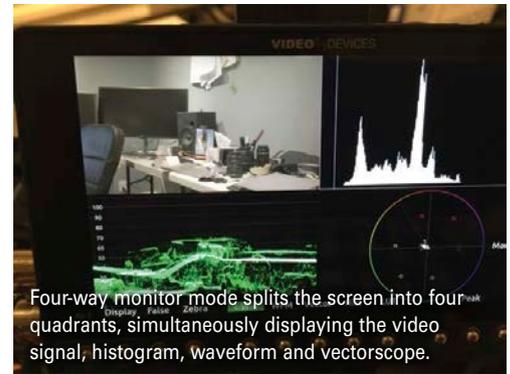
Previous to the recent firmware update, LUTs were not able to be burned in to recorded files. With the addition of H.264, an applied LUT is burned in to the H.264 MP4 file and saved via SD card, while a master ProRes 4K file is saved to the SpeedDrive without a LUT burned in. This is ideal when you want to simultaneously record a full dynamic range, log-encoded ProRes master file for the edit suite and a Rec. 709 H.264 file suitable for normal viewing.

Recording of HD/UHD/4K is via HDMI or SDI. UHD or 4K signals are limited to 30p, while the maximum frame rate for HD is 120p. The PIX-E series also lacks the ability to record camera raw or to convert raw input to ProRes.

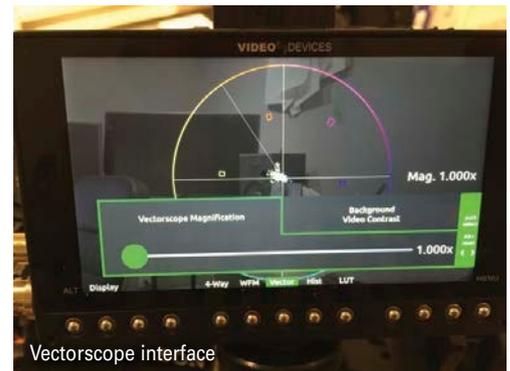
Moving to audio, the PIX-E5 and E7 can record up to eight tracks of embedded audio. External audio can be recorded and monitored via two unbalanced line 3.5mm mini jacks. Adding the optional \$399 PIX-LR audio interface adds two balanced XLR mic/line inputs with limiter. The LR, not available at our testing of the unit, mounts to the bottom of the PIX-E via a 1/4-20 mount, tightened by an Allen wrench. It connects cordlessly to the PIX-E. The PIX-LR features the same mic pre-amps as found in Sound Devices' high-quality audio recorders, along with LED metering and dedicated transport and gain controls.

Sound Devices, through its Video Devices brand, has missed absolutely nothing with this monitor/recorder for today's smaller cameras. It is solid. Despite its numerous options, the menu structure and button options are straightforward and easy to navigate. It is reasonably priced and media options are relatively inexpensive.

I hope that DNxHD will become available in a future update. Raw recording would be a wonderful addition, but I am not certain that it is possible within the hardware constraints. I hope I am wrong and that raw functionality eventually



Four-way monitor mode splits the screen into four quadrants, simultaneously displaying the video signal, histogram, waveform and vectorscope.



Vectorscope interface



Waveform controls



TapZoom provides instant 2x or 4x zoom wherever you tap the touchscreen.

finds its way onto the PIX-E.

The PIX-E5 proved to be everything I expected when I first encountered it at the 2015 NAB Show. I highly recommend it to those looking for external ProRes recording with a first-rate monitor and top-notch construction. **dv**

# MADE FOR IPAD, VALUABLE FOR PRODUCTION

Cinematic Camera Control with Manfrotto's Digital Director 2.0

It goes without saying that the DSLR has been a game-changing tool for filmmakers looking to capture “cinematic” images on a budget, but one of the biggest challenges for video capture with DSLRs is proper monitoring and workflow management. The compact cameras typically contain a small 3-inch LCD screen that does not articulate, making it difficult to view shots at low or high angles.



Manfrotto Digital Director allows control of Canon and Nikon camera functions with a tethered Apple iPad.

Manfrotto introduced a product at the 2015 NAB Show that generated a lot of excitement for DSLR filmmakers. Digital Director, which consists of a hardware dock and an app, interfaces between a DSLR and an iPad to manage photo and video workflows. The Apple-certified MFi (Made for iPad) device not only provides a larger image viewer thanks to the iPad's display, it also allows the user to control the camera's main functions via the iPad's touchscreen. Digital Director is compatible with most Canon and

Nikon DSLRs. Check the Digital Director web site for a complete list.

Digital Director consists of an iPad frame, USB cable and an iPad app. You will need to supply both the iPad and camera, and the app can be downloaded for free from the iTunes store. Supported iPads include Air, mini and Pro.

Not only does the frame support your iPad, it features a dedicated CPU (600 MHz 256 MB DRAM ARM Cortex-A8 processor) that enables camera control



## Quick Take



**Product:** Manfrotto Digital Director

**Pros:** iPad's large display is better for monitoring shots than a DSLR's 3-inch LCD monitor. App displays focus peaking and zebra filters, which most DSLRs do not. Ability to import and export photo files.

**Cons:** Difficult to read iPad effectively in direct sunlight. iPad needs to be tethered to camera, so Digital Director is unwieldy for handheld use. Slight latency. Better suited for still photography applications than video.

**Bottom Line:** If you're working in a studio environment, this is a great tool for framing and making quick adjustments to your shots, as well as showing clients instant results. Easy to set up and intuitive to use.

**MSRP:** \$299.99

**Online:** [www.manfrotto.us/products/digital/digital-director](http://www.manfrotto.us/products/digital/digital-director)



User interface of the Digital Director app

and real-time high resolution video display from the camera. All key shooting parameters can be controlled via the Digital Director app, including exposure, ISO, shutter speed, aperture, white balance and focus. Shooting remotely via the iPad Retina Display, the app enables real-time “Live View” monitoring and adjustments, with dynamic histogram and audio level display. Video streaming between the devices is smooth and consistent, though with a bit of latency.

## SETUP

I tested the Digital Director with a Canon EOS 70D DSLR and found the setup process simple and efficient. The iPad slides into the Digital Director frame and connects to the frame’s Lightning connector. The iPad may be locked or unlocked by lifting a small lever toward the top of the frame. Then connect the USB cable from the frame to the camera’s USB port.

The Digital Director frame is powered by four AA batteries. If you’re shooting near a power outlet, you can power the Digital Director with the included power supply and cable, which also charges the iPad.

I attached the Digital Director via a Manfrotto 244 Micro Friction Arm to my tripod’s 3/8-inch screw input.

Once the iPad is secure and connected, turn

on the camera, press the Digital Director’s power button and open the app. Once it loads, you can start monitoring your shot and adjusting camera settings.

In December Manfrotto released version 2 of the Digital Director app, with new features including remote control of Manfrotto LYKOS and Litepanels Astra LED lights, enhanced focus peaking and zebra filters, and postproduction image adjustments.

## HANDS ON

After having used it for a few days, it was obvious that Digital Director works best on a locked-down camera. Unlike a device like the Teradek Bolt, which transmits wirelessly to a handheld monitor, Digital Director is tethered to your camera via a USB cable, so it’s not very effective as a handheld device. Be aware that there is some latency with Digital Director monitoring. For a scene with dialogue, there will be a slight delay.

In terms of the UI, the monitor display takes up roughly half of the screen, with camera settings taking up the other half. You can also go to a full-screen view, which retains audio meters and record and shutter buttons. At the top right is a

touchscreen toggle that switches between stills and video, and a switch to lock your settings once the image is to your liking.

Below the lock and power switches are controls for ISO, shutter, exposure and focus. In auto focus mode, simply tap anywhere on the screen to tell the camera to focus on that point. If you are shooting manually, there’s a touchscreen dial on the iPad for adjusting focus, although I was more comfortable focusing with the camera lens due to muscle memory with a physical lens.

Below the shooting controls are the buttons for record or shutter release, as well as an album creator for photos and general information about Digital Director, including user manual, troubleshooting menu, and a compatibility chart of cameras and optimal settings. Also located at the bottom of the screen are the histogram, audio meter,



Digital Director may be powered by four AA batteries or AC adapter

white balance controls, battery life indicator, drive mode and access to image galleries.

Obviously I found it much easier to check if focus was sharp on my iPad’s 9.7-inch screen than on my camera’s 3-inch LCD monitor. Digital Director also allows users to zoom in on a specific part of the frame for more precise control of focus. The ability to control focus with the touchscreen on the iPad is a great feature. My camera beeped for audio confirmation once the object I had selected was in focus.

The most exciting features for me are the focus peaking and zebra filters—features that are essential for filmmakers but are not typically available on DSLRs in video mode.

With the v2 update in December, the Digital Director app gained nuance with regard to focus

peaking, allowing users to adjust the intensity of the filter and to select the desired color for the peaking (red, blue, green, yellow).

With the zebra filter, I was able to adjust my exposure to analyze whether or not my highlights were clipping.

I found both features to work well, and it was fairly intuitive using the iPad for slight adjustments—although you can't activate focus peaking and zebra at the same time, for some reason. That's not a deal-breaker for me.

One promising feature I wasn't able to test is the ability to control Manfrotto LYKOS and Litepanels ASTRA LED lights (up to 13 of them) from the Digital Director app over Bluetooth. You can turn the lights off, dim them, adjust color temperature and configure them for multiple scenes.

## TARGET AUDIENCE

The system's slight viewing delay will cause problems for dialogue scenes, so I suggest that Digital Director is best suited for still photographers. Because the iPad is a networking device, a big advantage with Digital Director is that you're able to work with photo files like you would with a laptop computer—creating albums, sharing files and viewing them. I also found it very useful to be able to enter metadata from the iPad for individual files and albums. You can also downsize images while capturing to your iPad and download raw files.

As a display device for still photographs, it's amazing to be able to view and scroll through photos quickly on your iPad after capture. You can make quick color and contrast adjustments,



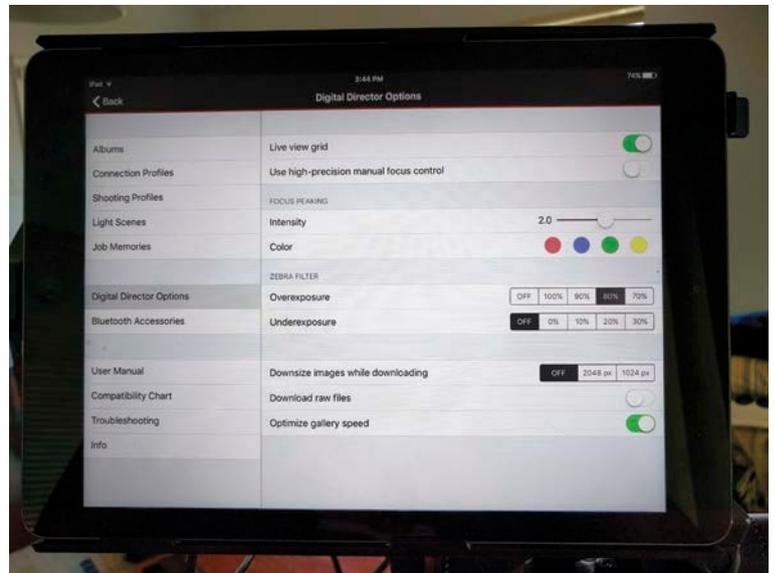
as well as share images with your clients, although probably not as efficiently as on a laptop computer.

There are versions of the Digital Director to support iPad Air, Air 2, mini 2/3/4 and Pro 12.9-inch. Each one is \$299.99.

It's worth mentioning that an iPad is not a replacement for a field monitor. Without some sort of sun shade, it's difficult to view your iPad outdoors in direct sunlight. Manfrotto does offer

a solution, the Manfrotto Sun Hood for the Digital Director, but it's an additional \$39.99.

If you're working in a controlled studio environment, Manfrotto's Digital Director is a must-have tool that will transform your DSLR into a more efficient professional imaging device. Although you'll need to supply the camera and iPad, the \$299.99 price tag (down from its original price of \$499.99) is still a good investment. **dv**



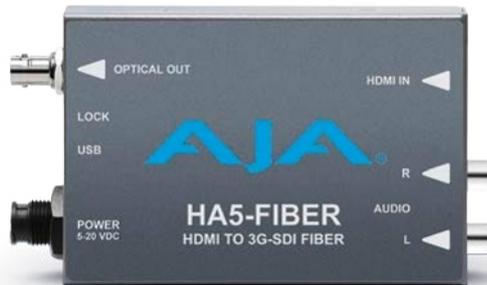
# TOOLKIT

New Gear

## AJA VIDEO SYSTEMS

### HA5-FIBER MINI-CONVERTER

The small size of AJA's HA5-Fiber enables this HDMI to 3G-SDI Mini-Converter to fit onto the back of a camera or neatly behind an equipment rack, extending HDMI signals up to 10 km. HA5-Fiber enables conversion of HDMI to 3G-SDI over single mode optical fiber, with up to 8-channel embedded audio supported in the HDMI input. The Mini-Converter features a two-channel RCA style audio input, an SDI embedded audio output, an optical output and a five-year warranty. HA5-Fiber will be available in July for a U.S. MSRP of \$695. It will ship with a power supply and USB 2.0 cable. [www.aja.com/en/category/mini-converters](http://www.aja.com/en/category/mini-converters)



## PHOTON BEARD

### HIGHLIGHT LED

Photon Beard's latest product range, Highlight LED, duplicates all the attributes of its long-popular Highlight fluorescent luminaire line while increasing efficiency and removing the need for periodic lamp replacement. The range includes four models ranging from 90W to 360W and includes the same selection of accessories as the previous products. Use of remote phosphor technology means accurate and consistent light quality with high CRI and TLCI ratings. Phosphor strips can be snapped in and out to change from tungsten to daylight when needed. Cooling is entirely passive, so the lights are completely silent, with no moving parts. [www.photonbeard.com](http://www.photonbeard.com)

## PANASONIC

### VARICAM 35/HS FIRMWARE UPDATE

A June firmware update for Panasonic's VariCam 35 and VariCam HS camera recorders expands recording options and enables workflow improvements including non-destructive in-camera color correction and the ability to save in-camera-created LUTs/CDLs on SD cards as standalone files. The upgrade encompasses support for writing data to Panasonic's new B series expressP2 cards for 4K and high-frame-rate recording, which feature faster read/write speeds. Viewfinder and Viewfinder-SDI outputs will now be able to display in different selected color settings. The update also includes compatibility with Panasonic's new AJ-WM50 wireless module that facilitates dual-band connectivity at both 2.4 and 5 GHz in a smaller unit. This firmware update, version 6.0, is available for download at the Panasonic service support web site. [www.panasonic.com/broadcast](http://www.panasonic.com/broadcast)



## PANAVISION

### MILLENNIUM DXL CAMERA

The recently unveiled Millennium DXL combines large-format optics and modular accessories from Panavision, an 8K image sensor from RED Digital Cinema, and new color science and optimized workflow from Light Iron. Michael Cioni, DXL product director and president of Light Iron, says, "Our streamlined workflow includes simultaneous recording of 4K proxy files—ProRes or DNx—alongside the 8K raw files. This creates a direct-to-edit workflow with the NLE of your choice. Using efficient SSD media, the cost of capturing 8K files with DXL is more economical than using third-party recorders on lower-resolution cameras. Light Iron Color and our Panavised Outpost Systems provide a workflow for DXL that can be easily adopted for shooting large-format photography." The Millennium DXL will be rented exclusively through Panavision and will be available in early 2017. [www.panavision.com](http://www.panavision.com)

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## ILLUMINATING YOUR OPTIONS

In this month's Buyer's Guide we focus on a number of lighting fixtures that allow you to set up the shot you want, whether in a studio or on location.

### FREZZI EYLIGHT HITS HOME RUN FOR WKTV IN UTICA

BY KEITH HUNT

When my station, owned by Heartland Media, transitioned to HD and found a need for a reliable portable light source for our mobile media journalists to go along with their cameras (JVC GY-HM650U), we considered a number of solutions. Other stations were using some lighting units with batteries mounted at the back, but we were looking for something self-contained and small enough to mount on smaller cameras. We needed an effective lighting solution that did not rely on AA lithium batteries, which are expensive and need to be recycled.

Frezzi's EyLight is a gem. It's lightweight and allows you to quickly check your battery power with the LED gauge. The self-contained battery is so handy when you're doing a live shot, when you

don't want to risk running your camera battery down. Frezzi conveniently located the switches and dimmer on the camera operating side. The color temperature is maintained throughout the dimming range, and the configuration is just perfect.

I can't say enough about it—the design, the quality of the work. The only shortfall has been a few small screws that needed replacing after working themselves loose, but I've been informed that the fixture now ships with a tighter Loctite-style cement that will rectify this. The EyLight is a great addition for any cameraman or camerawoman who would like to have a nice, compact, self-contained light. This is a home run, Frezzi. Thank you very, very much.

*Keith Hunt is a photojournalist at WKTV in Utica, NY.*



### IKAN MICROSPOT ILLUMINATES DIGITAL MEDIA CURRICULUM

BY ANDREA NGUYEN

I needed a reliable and versatile on-camera light for quick shots, and the iLed-MS MicroSpot light from Ikan Corp. was perfectly suitable for me. As an AV production teacher, I've found this handy and portable spotlight useful in recording tutorial videos, stop-motion animation and other short video projects. I love the fact that it's user-friendly, rechargeable, lightweight and small enough to fit in my pocket.

The internal lithium battery charges quickly using a Micro USB cable. There's a dimmer switch that allows you to adjust the light intensity to 10 percent. Another cool built-in feature are the four barndoors attached to the light: two solid black barndoors, one frosted diffusion gel barndoor, and an orange gel barndoor for 3,300°K output. Fold all the barndoors out and the bulb shines an intense 40-degree 5,600°K spotlight on any subject. Fold the opposite solid black barndoors close together, leaving a half-inch gap, and you can create a rectangular "highlighter" light.

When my students and I were recording a horror scene, this easily conceal-



able light allowed us to add suspenseful lighting from underneath the subject. The MicroSpot also works well for scenes where you don't have a lot of room, such as inside a car, closet or other tight spots. The creative possibilities this little light allows are endless.

*Andrea Nguyen is a digital media instructor at Kirk Lewis Career and Technical High School in Pasadena, Texas.*

# BUYER'S GUIDE: ON-CAMERA LIGHTING



## ← COOL-LUX U3 TRI-LIGHT

The U3 Tri-Light is designed for on-site video production where conditions require the operator to change light output without using dimmers and without altering color temperature. Light output is decreased on the U3 from long shots to mid-range and close-ups with the flip of a switch. The light features two 35-watt flood lamps and one 20-watt spot. The combined output for all three lamps is 1,500 lux. Turn off the spot and output drops to 700 lux. Turn off one of the floods and output is reduced to 350 lux. The U3 ships with rotating gel holder, daylight and diffusion gels and a 4-pin XLR power cord. Each lamp has an individual on/off power switch. A master switch turns all three lights on or off simultaneously. [www.cool-lux.com](http://www.cool-lux.com)

## LOWEL → BLENDER

Lowel Blender provides many options for creative capture while on location. The fixture's two sets of LEDs, in tungsten and daylight color temperatures, are quickly and easily blended, allowing the user to match the fixture's output to the mixed light source of their location. In addition to the option of fluid light blending, Blender may be used to create a contrasting color blend to make the subject of the shot stand out. This system is powered by AC or battery for maximum flexibility, and can be transported and stored easily. Lowel is a brand of the Tiffen Company. [lowel.tiffen.com/blender/](http://lowel.tiffen.com/blender/)



## ← MANFROTTO LUMIMUSE

The Lumimuse Series of LED lighting fixtures combines Manfrotto design and quality with the lighting expertise of sister company Litepanels. Lumimuse 8, with eight surface-mount LED diodes, has a 5,600°K color temperature and four-step dimming.

Its internal lithium ion battery may be charged with a standard Micro USB cable. Battery life is about 60 minutes. To change the quality of the light output, Lumimuse ships with a snap-on filter holder and tungsten and diffusion filters. The largest Lumimuse in the range, Lumimuse 8 weighs about 6 ounces and is around the size of a pack of playing cards. Color accuracy is >92% CRI. [www.manfrotto.us](http://www.manfrotto.us)

## ZYLIGHT → NEWZ

ZyLight's Newz on-camera LED light has a proprietary LED matrix that delivers true color reproduction. Ideal for run-and-gun shooting, Newz delivers a soft but punchy light with variable color temperature from tungsten (3,200°K) to daylight (5,600°K). Plus, its strobe function adds versatility for DSLR applications. Its integrated one-touch quick release mount makes setup and breakdown more efficient, while its custom barndoors and unique articulated arm allow shooters to easily adjust the height and angle of the light. Newz is water resistant (IP54) for reliable operation in challenging weather conditions and includes ZyLink, ZyLight's wireless technology, so it can be linked to multiple Zylights for simultaneous remote control. [www.zyLight.com](http://www.zyLight.com)



## MYSTERIES REVEALED

### The Final Cut Pro X Post Process for *Voice from the Stone*

As someone who's worked on a number of independent films, I find it exciting when an ambitious feature film project with tremendous potential comes from somewhere other than the mainstream Hollywood studio environment. One such film is *Voice from the Stone*, which features Emilia Clarke and Marton Csokas. Clarke has been a fan favorite in her roles as Daenerys Targaryen in *Game of Thrones* and the younger Sarah Connor in *Terminator Genisys*. Csokas has appeared in numerous films and TV series, including *Sons of Liberty* and *Into the Badlands*.

In *Voice from the Stone*, Clarke plays a nurse in

1950s Tuscany who is helping a young boy, Jakob (played by Edward Ding), recover from the death of his mother. He hasn't spoken since the mother, a renowned pianist, died. According to Eric Howell, the film's director, "*Voice from the Stone* was a script that screamed to be read under a blanket with a flashlight. It plays as a Hitchcock fairy tale set in 1950s Tuscany with mysterious characters and a ghostly antagonist." While not a horror film or thriller, there is a supernatural element in the exploration of the emotional relationship between Clarke and the boy.

*Voice from the Stone* is Howell's feature

directorial debut. He has worked on numerous films as a director, assistant director, stuntman, stunt coordinator, and in special effects. Dean Zanuck (*Road to Perdition*, *Get Low*, *The Zero Theorem*) produced the film through his company Zanuck Independent. From there, the production takes an interesting turn toward the American heartland, as primary postproduction was handled by Splice in Minneapolis. This is a market known for its high-end commercial work, but Splice has landed a solid position as the primary online facility for various film and TV series, such as History Channel's *America Unearthed* and ABC's *In An Instant*.



Editor Clayton Condit and director Eric Howell during the offline edit at Splice

## TUSCANY, MINNEAPOLIS AND MORE

Clayton Condit, who co-owns and co-manages Splice with his wife Barb, edited *Voice from the Stone*. We chatted about how this connection came about. He says, "I had edited two short films with Eric [Howell]. One of these, 'Anna's Playground,' made the short list for the 2011 Oscars in the short films category. Eric met with Dean [Zanuck] about getting involved with this film, and while we were waiting for the financing to be secured, we finished another short, called 'Strangers.' Eric sent the script to Emilia [Clarke] and she loved it. After that, everything sort of fell into place. It's a beautiful script that, along with Eric's style of directing, fueled amazing performances from the entire cast."

The actual production covered about 35 days in the Tuscany region of Italy, where the exterior location was filmed at one castle and the interiors at another. This was a two-camera shoot, with ARRI Alexas recording to ARRIRAW. Anamorphic lenses were used to record in ARRI's 3.5K 4:3 format, but the final product is desqueezed for a 2.39:1 "scope" final 2K master. The DIT on set created editorial and viewing dailies in the ProRes LT file format, complete with synced production audio and timecode burn-in. The assistant editor back at Splice was loading and organizing the same dailies so that all materials were available there as well.

Condit explains the timeline of the project: "The production was filmed on location in Italy during November and December of 2014. I was there for the first half of it, cutting on my MacBook Pro on set and in my hotel room. Once I travelled back to Minneapolis, I continued to build a first cut. The director arrived back in the States by the end of January to see early rough assemblies, but it was around mid-February when I really started working a full cut with Eric on the film. By April of 2015 we had a cut ready to present to the producers. Then it took a few more weeks working with them to refine the cut. Splice is a full-service post facility, so we kicked off visual effects in May and color starting mid-June. The composer, Michael Wandmacher, created an absolutely gorgeous score that we were able to record during the first week of July at Air Studios in London. We partnered with Skywalker Sound for audio postproduction and mix, which

took us through the middle of August."

As with any film, getting to the final result takes time and experimentation. He continues, "We screened for various small groups, listening to feedback, and debated and tweaked. The film has a lot of beautiful subtleties to it. We did not want to

cheapen it with cliché tricks that would diminish the relationships between characters. It really is first a love story between a mother and her child. The director and producers and I worked very closely together, taking scenes out, working pacing, putting scenes back in, and really making sure we



Edward Dring (Jakob) and Emilia Clarke (Verena) in a scene from *Voice from the Stone*



Marton Csokas (Klaus) and Emilia Clarke (Verena)

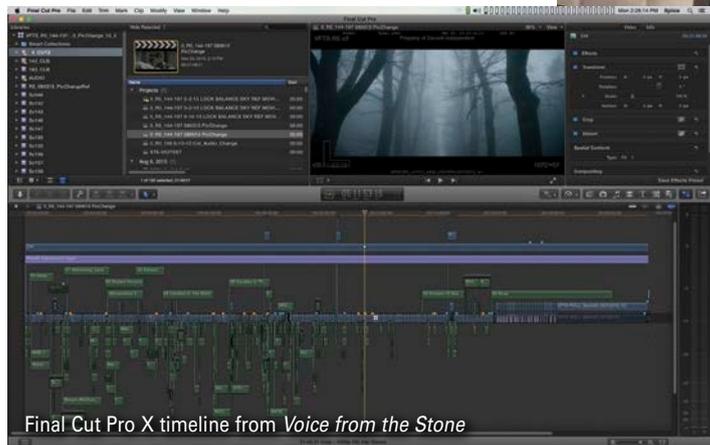
PHOTOS BY PHILIPPE ANTONELLO



Eric Howell (left) and producer Dean Zanuck



On the set



Final Cut Pro X timeline from *Voice from the Stone*

with [Blackmagic Design] DaVinci Resolve. Today we are sort of an 'all of the above' shop, but for my offline projects, I really think FCP X is the best tool. Eric also appreciated his experience with FCP X, as the technology never got in the way. As storytellers, we are creatively free to try things very quickly [with Final Cut Pro X]."

were renamed by scene and take numbers using different keyword assignments to help sort and search. The film was shot with two cameras, which Cody grouped as multicam clips in FCP X. He used Sync-N-Link X [from Intelligent Assistance] to bring in the production sound metadata. This enabled me to easily identify channel names. I tend to edit in timelines rather than a traditional source and record approach. I start with 'stringouts' of all the footage by scene and will use various techniques to sort and track best takes. A couple of the items I'd love to see return to FCP X are tabs for open timelines and dupe detection."

had an effective story."

Splice handled visual effects ranging from sky replacements to entire greenscreen composited sequences. Condit explains, "Our team uses a variety of tools including [The Foundry] Nuke, [SideFX] Houdini, [Autodesk] Maya and [Maxon] Cinema 4D. Since this film takes place in the 1950s, there were a lot of modern elements that needed to be removed, like TV antennas and distant power lines, for example. There's a rock quarry scene with a pool of water. When it came time to shoot there, the water was really murky, so that had to be replaced. In addition, Splice also handled a number of straight effects shots. In a couple scenes the boy is on the edge of the roof of the castle, which was a greenscreen composite, of course. We also shot a day in a pool for underwater shots."

### PIONEERING THE CUT WITH FINAL CUT PRO X

Clayton Condit is a definite convert to Apple's Final Cut Pro X. Condit says, "Splice originated as an Avid-based shop and then moved over to Final Cut Pro as our market shifted. We also do a lot of online finishing, so we have to be compatible with whatever the offline editor cuts in. As FCP 7 fades away, we are seeing more jobs being done in [Adobe] Premiere Pro, and we also are finishing

"Of course, like every FCP X editor, I have my list of features that I'd like to see, but as a creative editorial tool, hands down it's the real deal. I really love audio roles, for example. This made it very easy to manage my temp mixes and to hand over scenes to the composer so that he could control what audio he worked with. It also streamlined turnovers. My assistant, Cody Brown, used X2Pro Audio Convert to prepare AAFs for Skywalker. Sound work in your offline is so critical when trying to 'sell' your edit and to make sure a scene is really working. FCP X makes that pretty easy and fun. We have an extensive sound library here at Splice. Along with early music cues from Wandmacher, I was able to do fairly decent temp mixes in surround for early screenings inside Final Cut."

On location, Condit kept his media on a small G-Technology G-RAID Thunderbolt drive for portability. Once back in Minneapolis, he upgraded to Splice's 600 TB Xsan shared storage system that enables collaboration among departments. Condit's FCP X library and cache files were kept on small dual-SSD Thunderbolt drives for performance, and with mirrored media, he could easily transition between working at home or at Splice.

Condit explains his FCP X workflow: "We broke the film into separate libraries for each of the five reels. Each scene was its own event. Shots

Final Cut Pro X has several features to help refine the edit. Condit says, "I used FCP X's retiming function extensively for the pace and emotion of shots. With the optical flow technology, it delivers great results. For example, in the opening shot you see two hands—the boy and his mother—playing piano. The on-set piano rehearsal was recorded and used for playback for all takes. Unfortunately, it was half the speed of the final cue used in the film. I had to retime that performance to match the final cue, which required putting a keyframe in for every finger push. Optical flow looks so good in FCP X that many of the final online retimes were actually done in FCP X."

Singer Amy Lee of the band Evanescence recorded the closing title song for the film during the sound sessions at Skywalker. Condit says, "Amy completely 'got' the film and articulated it back in this beautiful song. She and Wandmacher collaborated to create something pretty special to close the film with. Our team is fortunate enough now to be creating a music video for the song that was shot at the same castle."

Zanuck Independent is currently arranging a domestic distribution schedule for *Voice from the Stone*, so look for it in theaters later this year. **dv**

# TIPS TO CLIP

## FLASHLIGHT FINDER

To make it easier to find his black flashlight in the dark recesses of his camera bag, Paul Muller of Denver, Co., wraps white tape around the barrel. I have done something similar, but I used the glow in the dark tape normally used to create stage spike marks that assist when a scenery change must be done in the dark.

## OVERSEAS SHOOT

A production job in Asia's 220-volt, 50-cycle electrical environment prompted a call for lighting tips from Brian Mayworth of New York City. He says he will not have the option of renting local equipment.

I suggest that before you leave, you purchase 220-volt lamps and the appropriate plug adapters for your instruments. They are readily available here, and you may not have the time to look for them there. I don't think you need to buy foreign extension cords and power strips. It is much more efficient to use your own cords and place the adapter at the wall. U.S. three-for-one taps are easy to pack and will allow you to use one adapter for several instruments. (Being careful, of course, to not overload the circuit.)

One more thought: Many countries do not have the smooth power found in most of the United States, so it's a good idea to run your camera and other delicate equipment on rechargeable batteries. If you are hit by a power spike, only the charger will be damaged and you can go on shooting.

You don't want to count on this, but some international hotels have 110-volt outlets into which you can plug U.S. chargers. Many chargers will operate on either system (read the label on yours).

It is also a good idea to photograph all of your equipment before leaving the U.S. The images may help you get it through customs both overseas and on your way back.

I hope these tips help and that you have a successful shoot.

DICK REIZNER

## COFFEE CUP COLLAR

One of the prime directives backstage at any video shoot is this: No open containers of liquid will be placed on any equipment table. The reason is obvious, but some producers and clients hiring us seem to think that because they are paying the bills, their coffee and other drinks are exempt. If you run into such a situation, you might want to follow the tip used by an engineer I shall refer to only as Louis. When the client on a recent project insisted on having his coffee close at hand, as you can see in the photo, Louis grabbed a full roll of 2 inch gaffer's tape and put it around the cup, making it as spill-proof as possible.



## REEL GOOD TIP



Very long cables are much easier to handle if they are on a reel, but if the reel does not have a stand, getting the cable on or off can be a problem. Jeff Carrender of San Jose, Calif., suggests placing it on a broomstick wedged between two chairs. The reel turns easily and you can relax a bit by sitting in a third chair.

## MORE TAPE TIPS

After having written this column for more than 34 years, I sometimes wonder if anyone cares. Then I get a letter like this one from Patrick Murphy.

Dear Tips to Clip,

Ever since I started going to the Dick Reizner Workshops many years ago at the Video Expos in NYC, I have always worked with gaffer's tape close at hand. Dick taught me to never toss it until it's 100 years old. To this day I always have strips on my clipboard in case it's needed, and it's bailed me out many times.

Thanks,  
Pat Murphy, Director

## SHARE YOUR TIP

We will send you a Tipster Tool Tote if you share a favorite production tip or question with your fellow professionals. Just drop me an e-mail at [DVTips@nbmedia.com](mailto:DVTips@nbmedia.com). All submissions become the property of Reizner & Reizner. None can be returned.

JON SILBERG

# DIFFICULT PEOPLE IS A SHOW ON THE GO

## Designing Location and Studio Scenes on a Tight Shooting Schedule

The Hulu series *Difficult People* features fictionalized versions of real-life writer/comedians Julie Klausner and Billy Eichner as self-obsessed, misanthropic would-be celebrities who encounter equal helpings of failure and misery, mostly self-induced, in their search for fame and love in New York. The show goes into its second season retaining much of the “indie” style it had in its first, but with a bit more “gloss” in some portions, according to cinematographer Jon Delgado, who operated the first season for Steven Calitri, who’s since moved on to other shows.

“For season 2 we made the conscious decision to mix in a bit of a studio look with the indie look,” he says. The show’s principals and director Jeffrey Walker “thought a lot about the first season and everything we learned about shooting it the way we did, and then tailored a look specific to the series. The show got bigger. We fill up larger environments and we have more background artists. There are fewer locked-down shots and more shots on a dolly and Steadicam.”



Billy Epstein (played by Billy Eichner) and Julie Kessler (Julie Klausner) in a scene from season 2

Both seasons were shot with ARRI Alexa Plus cameras, with any of a number of Angenieux

Optimo zooms and Zeiss Ultra Primes, always slightly diffused. (Delgado traded Calitri’s Tiffen Hollywood/FX Soft filter for a Black Pro-Mist this season.) Material is recorded to SxS Pro cards in 2K ProRes 4444 (Log C). Scenes are always covered by two cameras, operated by Chris Reynolds on A-camera and Yousheng Tang on B-camera and Steadicam.

Delgado, who spent many years as a gaffer and operator, came to his DP duties with a lot of experience in lighting, which he says was essential when he was called on to light some of the fairly large spaces the season 2 scripts called for, but without the the Condors and other giant lighting instruments that “studio” budgets usually afford.

“Coming from a bigger-budget world, I think in terms of lighting spaces and letting the actors act within that space, rather than starting small on the actors as you might do in an indie film,” the

(continued on page 48)



Director of photography Jon Delgado (in North Face jacket) with Billy Eichner, James Urbaniak and Andrea Martin, who plays Julie’s mother

# A VIDEO GUIDE TO BROADCAST INNOVATION

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## TIPS & TECHNIQUES

*From the Pros*

### 1 The Story Comes First

Shoot for the story, not your demo reel. While a complicated camera move may look exciting, if it doesn't serve the story, then there's no place for it. Don't be afraid of simple. Simple is your friend.

### 2 Learn How To Light

Light is your paint brush. Not only does it let viewers see the subject, but it creates mood and influences how the audience reacts to the scene. Educate yourself on the various types of light fixtures, the difference between hard and soft light, and the tools available to shape and manipulate it.

### 3 Know Your Gear

Before arriving on set, make sure you're familiar with the gear you'll be using. If you're a camera assistant, try to get your hands on the camera ahead of time or, at the very least, read through the user manual. Being prepared saves time on set, and we all know what they say about time.



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# LEARN

(continued from page 44)

cinematographer says. “We shot inside a theater in Washington Heights that seats maybe 10,000 with ceilings about 300 feet high and we were in the second tier level of the audience. We had about 30 extras. So the challenge was, how do we capture the feel of the space, light enough at one time so we can shoot in a timely manner but not give away how few people there are in the audience? That was a job for fairly big lights and wide frames, like a 12x with light grid cloth, far enough away to cover a big space but close enough that it falls off quickly behind the main actors. It gave us a beautiful quality of light that still fell off quickly so we didn’t have to flag the whole space.”

Delgado likes to push PAR cans for effects that a larger-budget show might look to a much stronger unit to accomplish. “For night exteriors, I’ll light my key area, but it really makes a difference when you can see some of what’s in the background, maybe down the block,” he says. “I like to use ‘firestarters,’” he says of his PAR 64 1,200-watt lamps, “and just pick out certain parts of a building in the background. You can shape the light well and get some nice accents on something up to 300 feet away. It’s a lot more economical than bringing in an 18K and a lift.”



Delgado’s approach to lighting is generally to use fairly soft light to create an environment in which the actors have some freedom of movement. While they don’t regularly go off script, it’s vital that when they do, cameras be in position to capture it. Director Walker blocks scenes so that the A- and B-cameras are always cross-covering to capture spontaneous moments from both angles. “So it wouldn’t make sense to have hard light and deep shadows,” Delgado adds.

The shooting schedule for *Difficult People* is fairly tight, working out to five days per episode, according to Delgado. “But we don’t shoot in order at all,” he says. “We shot the season over three months, with two weeks on soundstages and the rest on location.”

Part of the fun of the series comes from the surprise cameos in every episode. Season one featured Debbie Harry, Seth Meyers, Fred Armisen, Kathie Lee Gifford and others. “We had to schedule around their availability,” Delgado explains. “That really dictated what we could shoot when. In fact, we didn’t finish the first episode of season 2 until almost the very end.

“Some comedy shows look like they’re shot in a studio,” Delgado sums up, “and others are more indie-like, with characters walking and talking in real spaces. Without a lot of control over the elements, I think on *Difficult People* we’re able to achieve the best of both worlds.”

Season 2 of *Difficult People* premieres on Hulu on July 12. **dv**

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Azden	25	<a href="http://www.azdencorp.com">www.azdencorp.com</a>	Manfrotto	17	<a href="http://manfrotto.us">manfrotto.us</a>
B&H Photo-Video	46-47	<a href="http://www.bhphotovideo.com">www.bhphotovideo.com</a>	NewTek	5	<a href="http://newtek.com">newtek.com</a>
Bitcentral	23	<a href="http://www.bitcentral.com">www.bitcentral.com</a>	Smart Sound	19	<a href="http://smartsound.com">smartsound.com</a>



STEFAN SARGENT

## BRUSH UP YOUR SHAKESPEARE

### Right Back Where I Started From

**Y**ay! I'm back at BBC Ealing. I'm so happy! I run up the stairs to the room with all the FOMs. "Hi Fred, hi Derek, hi Simeon. I'm an editor now!"

Simeon is the film operations manager for editors. We go down the stairs to the BBC canteen. He can't wait to tell me about the strange and wonderful ways of BBC editing.

"Stefan, we've got Ampex VR1000 videotape recorders. Right? Well, they cost £40,000 and are bloody useless. Video editing is a disaster. You can't splice the 2-inch tape. They say you can, but in practice you can't, and it ruins the tape anyhow. The show you'll be working on, *The Wars of the Roses*, is a 35mm telerecording [kinescope or kine in the United States] from live cameras."

#### HEY BRA' WHAT'S DA KINE?

"A telerecording [kine] is film. Film, we all know and love. A 35mm synchronized camera shoots a 405-line cathode ray tube. It shows a negative image so the processed film is positive. Are you following me?"

"Peter Hall, the boss of the Royal Shakespeare Company, wanted to do it on the stage at Stratford on Avon. A bloody stupid idea, if you ask me. They had to pull out seating and completely rebuild the sloping stage to make it flat. Why? They could have done it in our TV studios. We had to run in land lines to the center and record it as a 35mm telerecording. Madness..."

"To complicate everything, they shot each sequence four or five times, moving the six cameras to different positions. Each pass, the director called the shots, so the cutting is different. Eight weeks shooting with over 50 BBC staff on location and who knows how many RSC people. Did I say 'madness' already?"

#### BINGE TELEVISION 1965 STYLE

"All that effort and it winds up in a room here in Ealing, cans and tapes from floor to ceiling. Three three-hour programs—a nine-hour marathon to be broadcast over three days. And it's all yours, my boy!"

"Gee, thanks, Simeon. But don't you have a real, full-time editor?"

"Frankly, no one wanted the job. We dumped it on Nobby Clark, but Shakespeare is not his thing. You understand Shakespeare, can do Shakespeare, can't you?"

"Sure. 'If she says your behavior is heinous, kick her right in the Coriolanus.'"

"Shakespeare?"

"No, Cole Porter."

#### FIRE BURN AND KELLER BUBBLE

I meet Nobby and look at the half hour he has cut. There's a freeze-frame that



Our edit room has a six-plate 35mm Keller flatbed.

stands out. I try to be tactful.

"Nobby, you can see the film grain suddenly stops on the freeze."

"I know. I had to extend the scene."

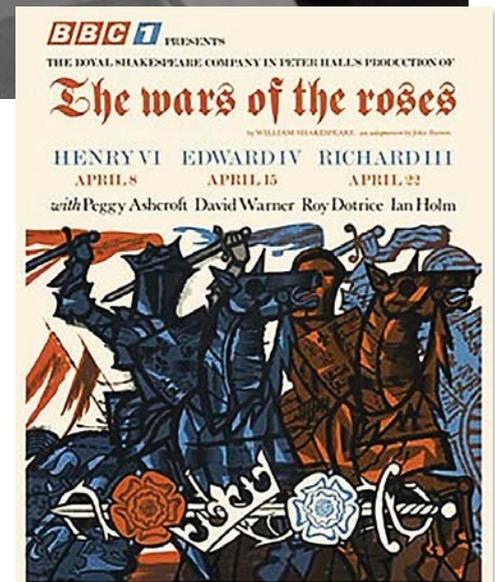
"Then what you must do is find a spot where you can run the film back and forward, back and forward. That way the film grain keeps moving."

"Brilliant. You take over. I will look after labels and cut the M&E rolls. Peter Hall and John Barton will be in this Friday night to review our work—no, I mean, your work."

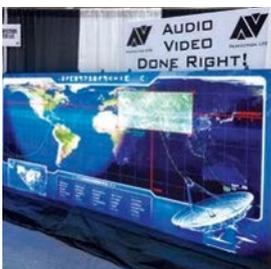
Nobby has backed out, it's my baby. I have five days to prove myself before they come.

*Fear no more the frown of the great.*

To be continued. **dv**



*The Wars of the Roses* aired on BBC1 in April 1965.



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\*MP4 recording only

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