Jon Fauer, ASC www.fdtimes.com June 2024

# FILM AND DIGITAL TIMES

Art, Technique and Technology in Motion Picture Production Worldwide

## Sony Cine Camera Reports

# Introduction

This FDTimes Special Edition began at the beginning of the year when colleagues called in with stories about recent jobs that happened to be filmed with Sony VENICE, BURANO and FX3 cameras.

These are not eulogies or reviews or production paeans. Instead, they are somewhat technical, sometimes nerdy, always artistic discussions about interesting films and series with lots of details about lenses, lighting, LUTs, peppered with long discourses on Director-DP dynamics, crew management, psychology, color science, career beginnings, film schools, first jobs, and all the other tales told on location waiting for the sun to rise, the clouds to part, or the next shot in a glass after wrap.

And, oh yes, the cameras:

## VENICE

**September 6, 2017.** Sony's original VENICE cine camera was launched at Sony Pictures Studios in Culver City, not far from Venice Beach. The European premiere was in London at Pinewood Studios on Sept 7. Sony announced that VENICE would ship by February 2018 in Super35 format only. At the time, Full Frame and E-mount functionality were not expected until mid-year 2018.

One week later, a Full Frame 36x24mm VENICE serendipitously appeared at IBC in Amsterdam and Sony announced Full Frame capability on delivery.

VENICE came with a PL mount. A lever-lock E-mount lurked underneath. The big news was the big picture, dual internal ND filter wheels with 0 to 8 stops of ND, 15 stops of dynamic range and support for almost every format from Full Frame 3:2 to Super35 4K 18mm full-height 4:3, anamorphic and spherical, and everything in between. The sensor block/lens mount could separate from the recording body—in what we all called RIALTO mode, like the bridge connecting two parts in the city of VENICE.

## VENICE 2

**November 15, 2021**. Four years and nine days after the original VENICE camera first launched in LA, VENICE 2 arrived.

There were two models: VENICE 2 8K and VENICE 2 6K. How do you distinguish between an original VENICE and the new VENICE 2? Original VENICE requires an AXS-R7 unit attached to the back for X-OCN recording. VENICE 2 has X-OCN built in. Its base is completely flat, with big air vents, whereas the original VENICE has a removable shoulder pad on the bottom. 8.6K and 6K image sensor blocks were interchangeable.

## BURANO

**September 12, 2023.** BURANO blends the front-end styling of VENICE with the rear curves of an FX6. It has the same front PL Mount over a Lever-Lock E-mount. BURANO is 1 inch shorter and 3 pounds lighter than VENICE 2, with a magnesium and aluminum body.

BURANO innovates with in-body image stabilization and in-camera variable ND filters.

Other cameras are discussed in this report, including Sony's small and capable FX3, Alpha series mirrorless cameras and more. See additional details and specs at the end of this report.

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## Cover:

Ed Wild, BSC on *The Ministry of Ungentlemanly Warfare.* Photo by Daniel Smith. Courtesy of Netflix.

# Original VENICE, VENICE 2 and BURANO

Original VENICE (6K)
with
AXS-R7 Recorder


2 SxS Memory Card Slots.

2 AXS Memory Card Slots.

VENICE 2 (8K)


44 mm
(1.73")

2 AXS Memory Card Slots. No SxS Cards.

BURANO (8K)


25 mm
(1")

2 CFexpress Type B Card Slots.

# Ed Wild, BSC on *Gentlemen* and *Ungentlemanly*

# Ed Wild, BSC on *Gentlemen* and *Ungentlemanly*

Opposite: Ed Wild, BSC on *The Gentlemen.* Photo by Kevin Baker. Courtesy of Netflix.
Above: Frame from The Gentlemen. Theo James as Eddie Horniman. Courtesy of Netflix.

**Gentlemen**. *The Gentlemen* is a 2024 series created by Guy Ritchie, based on his 2019 film. Eddie Horniman (Theo James) unexpectedly inherits his father's sizeable country estate, only to discover it's part of a cannabis empire. A host of unsavory characters from Britain's criminal underworld want a piece of the action. Trying to extricate his family, Eddie gets sucked into the world of criminality, and begins to find a taste for it. The series is set in the world of original film, with a new cast.

**Ungentlemanly.** *The Ministry of Ungentlemanly Warfare* is a 2024 feature film directed and co-written by Guy Ritchie. Inspired by true events, it is an action-comedy about the first special forces organization formed during WWII by Winston Churchill and a small group of military officials including Ian Fleming. A motley crew of rogues and mavericks goes on a daring mission using entirely unconventional and utterly "ungentlemanly" fighting techniques. That led the way to the British SAS.

Ed Wild BSC is the cinematographer of *The Ministry of Ungentlemanly Warfare* and the first 2 episodes (including pilot) of *The Gentlemen*. Callan Green, ACS, NZCS shot 4 episodes and Björn Charpentier, SBC shot 2 episodes on *The Gentlemen*. We spoke with Ed Wild, BSC.

Jon:

Let's begin by talking about cameras on *The Gentlemen* and *The Ministry of Ungentlemanly Warfare*.

Ed Wild, BSC:

It's Guy Ritchie directing and having a lot of fun with a fantastic cast. With Guy, you're never quite sure what film you're going to be making when you start out on it. It's because he finds stuff and then he really mines it. The cast all have to be pretty open to that process.

Jon:

Is that true of the DP as well?

Ed:

Oh yes. I think documentaries massively helped me working with Guy. When you're doing a documentary, and you're in a room and you go, "Right, what's the best angle here? What is working with the light and how do I enhance it?" You do that quite often because once he gets going, he finds the scene with the actors, and often rewrites the dialogue on the day.

Then, you will go like the clappers after that. Once he's got where he wants it to be, he'll move really fast and he shoots a lot of setups as well. The type of editing that he does requires strong images, but a lot of them. It's not like you're just trying to grab a long lens or some extra coverage. It's like everything's a very defined, so you have to balance the lighting and the frames.

There's always a tension between the camera movement and the lighting. Static camera, totally controlled lens, best lighting. Move the camera, a little bit trickier. Put on a really wide lens, even tricker. At the same time, it has an energy that I really like as well. I like the challenge of working that way.

A great thing is he moves really fast through the scene, so he doesn't do lots of takes. In some ways, as DP, you can take risks because you now the light's working great for about an hour in that room as is, with what you've planned, so you don't have to deploy Manitou cranes over the 18Ks, because there's no more daylight. You can fly a little bit fast and loose with Gu. He wants the lighting to be very bold.

I think we must marvel when we look at behind the scenes shots and there's a 20 x 40 fly swatter hanging from a Manitou with a couple of 18Ks and 9-lights bouncing into it, lighting up the window of a stately home. I was talking to a mate about that and he said that even on the big films, it used to be like a tower and crank-up with an 18K on it and that was it. If you had four 18Ks out there, you were like, "Wow, big time."

## Frames from *The Gentlemen by* Ed Wild, BSC

# Ed Wild, BSC on *Gentlemen* and *Ungentlemanly*

Above: Director Guy Ritchie (at left) with Giancarlo Esposito on *The Gentlemen.* Photo: Kevin Baker / Netflix.
Opposite: Frames from *The Gentlemen* courtesy of Netflix.

Jon:

Do you shoot multiple cameras usually?

Ed:

Yes, we shoot two cameras pretty much all the time. Occasionally, we've used three. On *The Ministry of Ungentlemanly Warfare*, we had three and a half weeks of night shoots for a scene in a massive harbor, like 500 meters by 500 meters, and we just needed more coverage. Relative to what they were trying to do, it was a tight budget and a tight schedule. So we had a third camera.

We never compromise the A camera. A camera dominates it. A camera gets everything it wants and B camera gets what it can and B camera is there to do something interesting, something you almost probably, if you're up against the clock, you wouldn't have time to do that shot if you were running just one camera.

It allows you to give you something different, particularly in coverage where Guy may be changing the dialogue. That helps the fluidity of the edit with the dialogue changes, but he also doesn't pursue eyelines hardcore, which makes it easier. He's not like, "I want to be in the mattebox eyeline," and then you're stuck, what else can you do?"

He likes a looser shot. He doesn't go for really long lenses or a long zoom fishing for something. He's not interested in that sort of coverage. If the B camera is doing something, it's got to be something that's within his vernacular, which is really good and keeps it solid.

Jon:

Do you operate one of the cameras?

Ed:

No. On *Ministry of Ungentlemanly*, I operated for a couple of weeks because we were on an old fishing trawler off-period. In prep you're like, "Yeah, maybe I'll have a Steadicam, maybe I have this and that." Then, when you finally find the right boat and finally gets delivered, you're like, "That'll be handheld, me on my own."

By the time we'd got the cast and us on the boat, it was pretty full. I'd done a bit of filming on sailboats way back in the day, so it seemed like a good idea for me to be operating camera. You're trying to get the dialogue, but also get the boat with the sails up and where the wind is and trying not to see Turkey in the background. It was quite a lot of fun. I do love operating and I hop on occasionally. I think on The Covenant, I did a few sessions. It's like more when I just want to do something with an immediacy. It's not because the operators can't do it, but actually the thing about being the DP / Operator is that you have the power to mess it up. I would take more risks than an operator would take.

On The Covenant, I used the VENICE with its little Rialto kit to get really close because I understood what Guy was going for. I think in the normal operating vocabulary it wasn't the same, but Guy and I were basically making music videos and commercials in the same time, although we'd never worked together. We have the same sort of background vocabulary. We can understand very quickly.

Jon:

Do you work "British style," or American style where you're setting the shots and lighting?

# Ed Wild, BSC on *Gentlemen* and *Ungentlemanly*

*The Ministry of Ungentlemanly Warfare.* Photo: Daniel Smith, courtesy of Lionsgate.

Ed:

I do set the shots. I don't operate, not because I don't want to be involved in the operating, but because it's just too busy. I've got to keep moving ahead. We're quite fluid about it. We say what we want and then the operators can find it better. Often, the B camera operator will just be wandering off and find something you hadn't thought about and that's really good as well. There's no s hard and fast rules. It's quite open to discussing what's the best way of doing stuff.

Jon:

You used Sony VENICE cameras on both films?

Ed:

Yes, I've used VENICE on for quite a while now. I've been using VENICE pretty much all the time since about 2018 or 2019. I tested the prototype and I just really liked it. Earlier, their F65 had beautiful colors. The F55, hmm… Then, they asked me to look at a VENICE 1 prototype, which I think had elastic bands holding it together. I loved the color rendition immediately. Then, they showed me the variable ND filters and I was like, "Okay, that's a game changer."

I was out on a job in New Zealand and I used the VENICE there. We were on those black beaches, which are basically iron filings. It's so pretty but once the Arctic wind kicks up you want to be renting your kit, not bringing your own. Having said that, we did a season with the VENICE. The light's incredibly variable in New Zealand, ridiculous, and you could dial in the ND immediately. I remember as a focus puller being in the desert and someone saying, "We need to change the ND quickly," and you're in a sandstorm. You're like, "Well, that ain't going to happen." Question being, do you really need to change the ND, boss?

Jon:

Was The Gentlemen done with VENICE 2?

Ed:

This is actually my fifth job with Guy since '22 and they've all been VENICE.

We had VENICE 1 on The Covenant, then we had VENICE 1 on Gentlemen. I think we switched over to VENICE 2 on the last film. I was super happy with the VENICE 1. I think actually the 8K on VENICE 2 is interesting, but not a game changer. It really was that more compact body that made us make the change.

Jon:

What lenses are you using?

Ed:

Oh, I use Tokina Vistas, which always raises an eyebrow.

Way back we were testing and there was quite a limited range of Full Frame wide angle lenses. We tried the Tokina 18mm and we were projecting it. My folks were like, "It's quite a good looking lens, isn't it?" We really got into them and like them. We've shot with those for four years or five years.

They're great. I basically I work with a light meter. I have to work

*The Ministry of Ungentlemanly Warfare.* Photo: Daniel Smith, courtesy of Lionsgate.

really fast. I don't often get into the DIT tent, so I like a lens that is true to it stops and I don't have to second guess its aberrations. I like the falloff as well.

I like large format. It's got a little bit of an anamorphic feel, but without the complications of anamorphic. It's a very particular sort of film that really works with anamorphic. Think of Lives of Others or something like that where they just nailed how to shoot with anamorphic.

We've been rolling on from one job to the next. We tend to run the same package, change the lighting from job to job.

Jon:

Are you shooting wide open a lot?

Ed:

No, I tend to shoot 2.8 ½ to 4 ½ because sometimes Guy will only do that one take. "Let's shoot the rehearsal," he'll say, and then, "I love it. Let's move on."

Jon:

You're kind to your focus pullers.

Ed:

Yes, and we have an amazing production designer as well, Martyn John, so there's alot of loveliness to be seen. It doesn't really benefit to not see it, and I find it annoying when all that loveliness just sort of mushes in the background on even a 40mm or 50mm lens. Sometimes I do use shallow depth field, but it's very much a specific choice.

Jon:

Speaking of set design, is Eddie's study, with those big windows and dark woodwork, a location?

Ed:

Yes, that was a location. Interestingly, that room had been used on the original Gentleman film as a kitchen. Martyn took two rooms and constructed the study. That was a tricky one because you could barely get any equipment around in there. One thing you do with Guy is try and keep windows clear. You can't stack stands and stuff outside. He wants to move fast. He wants to move around.

We built quite an extensive cantilever rig from the windows above because all those great houses of that period mirror the windows above. We hung 9Ks outside without being in the way. Trying to dig the light deep in the room was a real challenge. We used AquaBats, which are 4 or 8 foot waterproof LED fixtures designed by MBS. They were originally designed for the tanks in Pinewood. We started using them a lot in the UK. They're very good as a soft light because you can basically stick them as one-directional soft lights on a frame without a textile. They give you a good soft light, which in a London winter, even a London spring, look good.

We managed to hide the AquaBats behind pillar beams so that we could push a little bit of soft light deeper into the large rooms. The windows are very far away and Martyn used really deep colors—red classic Martyn. We always joke about it: lots of mirrors,

On *The Ministry of Ungentlemanly Warfare*. Photo: Daniel Smith, courtesy of Lionsgate.

and where there's not a mirror, there's a really dark wall with a bit of glass in front of it. I'm like, "Well, that is a mirror, Martyn." So we were trying to get that light to push deeper and still give Guy freedom. He doesn't really like soft top lights as such. It needs to have a direction to it. He likes a bite to it and a shape on the faces.

Jon:

What are you using any bounce inside for the faces?

Ed:

We used a lot of bounce. I like 4x4 and 3x6 Aladdin Mosaic flexible LEDs. I used to love a book light with a blonde (2K quartz) bounced in there. It was soft, but it wrapped around. It was slightly chaotic and messy. I struggle with the linear flatness of LED boxes. I often put bobbinet in front and double it up in places to mess it up so that big, flat, soft source gets a bit of gradation. The thing about LED so often is that it's so linear and perfect. Well, where is that in the real world? The other thing we use a lot is bouncing an Aputure spotlight into CRLS Lightbridge reflectors and diffusion. The Aputure light has a punchy, narrow beam that works very well with a Source Four fitting on it.

Particularly on The Gentlemen, we were working in stately homes, so you don't have the option to go in there and drill anything to hang lights. There are strict rules about what you can and can't do. Some of them don't even like light balloons because they don't like them touching the ceiling. At the beginning of The Gentlemen, we shot in Badminton House, which is a very famous house with a very big hall.

We had the worst weather ever. It was torrential rain and apocalypse-coming dark clouds. Every time we visited the house during prep, we thought "Yeah, we'll just put a little extra push through those windows and it'll look great. It'd be great." Then, it rained so heavily, it was almost black, and Max, the producer, said, "Right, well, we'll go into the hall." I walked into the hall and I couldn't even see anything. It was so dark.

We had a Creamsource Vortex rig for the night shoot that we wheeled round and put it quite far away so we could get all the windows. Then, we set the camera at 3,200 ASA and shot it because we wanted the stately home to feel quite big, open and luxurious. I was just trying to push enough light through with the Vortex rigs to still get a level of ambience. We had 10 Vortexes across and wound up dimming them down to 1%. Because it felt too bright. It worked out well in the end. It was classic Guy. You're sort of struggling with all the light, and then he goes, "No, I want to roll around him on a Steadicam." I say, "Of course you do. Brilliant, brilliant."

Jon:

Of course you do. When was that?

Ed:

We did The Covenant in 2022 and then *The Gentlemen* and we went to Turkey in the beginning of '23 for Ministry. When I prepped *The Gentlemen*, I was posting *The Covenant*, and during *The*

*Gentleman*, we started prepping *The Ministry of Ungentlemanly Warfare* on the weekends, including flying to Turkey to scout locations. We did episode 1 and 2 on *The Gentlemen*. Guy's been on a real run, so it's been juggling prep and post and shooting at the same time.

Jon:

Do you ever use Zooms?

Ed:

Yeah, we do use Zooms quite a bit, especially on a crane. But we've moved more towards using drones a lot more than cranes, to be honest. We actually started flying drones inside as well, instead of cranes.

We've started to use the DJI Inspire 3. The drone team finally convinced me to use it. You just look at it and you're like, "We're balancing it up against the VENICE." It allows us to do great stuff and things that we just couldn't do before. We also used what we called the chicken cam. It was a DJI Ronin 4D.

Jon

Did you use that in the chicken scene in *Gentlemen*?

Ed:

No, we hadn't gotten one by then. But the chicken scene was bonkers, wasn't it? That was a classic Guy. You read it on the page and then it's the insanity and fun of the whole show in one scene.

We really hammer the cameras. If I think about what we did on The Covenant where the whole film seems about throwing dust over Jake Gyllenhaal all the time with VENICE cameras as close as possible. I was thinking to myself, "It's going to break at some point," and nothing broke. It was quite amazing. What I do love about that camera is it feels a bit more like a 16SR. Even the way the screen's set up, it feels like, "Oh, I can quickly do that, rather than oh my God, it's a menu change. Everyone stand back. Nobody touch anything until we triple-confirmed it.

Jon:

I guess on *The Covenant* you were happy it was a rental. What rental house do you use?

Ed:

I go to ARRI Rental London most of the time.

Jon:

They carry VENICE?

Ed:

I think I have most of them on this job.

I've known Simon Surtees, who's the client contract there, for years. Ages ago he was my loader, so I have a really good relationship with them. They look after us because we sometimes have money and sometimes we don't.

Simon is a passionate filmmaker and was a great camera assistant in his time, so he's super interested in what's coming. You can be quite honest about equipment with him. He'll present something new, perhaps a new lens. You look at it and say, "That's great," and then you pull focus deeper and the stop slightly changes and you're like, "Okay, now put it back in the box because I can't deal with that havoc on set." He goes, "Yeah, but look at the interesting bokeh?" It's interesting. There are so many great lenses being built at not a lot of money now. But for me, it is really not the economic choice. It's just the lens that suits me.

You choose the lens for what you're going to do and the film you're making, based on the rhythm and the style of that film in. Guy likes deep stacks and pulling focus between deep stacks, so on an anamorphic, that's a total mess. It's distracting to what he's trying to achieve. I have used some vintage lenses that I thought are truly gorgeous, but you are very aware of the problems of working with those lenses. I've found myself very aware of them mechanically. You're like, "Oh, it doesn't focus closer than four feet." I don't want to be constrained by that. I mean, the K35 is a lovely lens. But then again, I've been caught out a few times when I've used vintage lenses and they just react differently to every setup and every scene.

I'm trying to create a consistent rhythm all the time in filmmaking for the director. I want it to be consistent and to know what's a great lens and what each focal length does. It's also about the lighting, the blocking, the frame and the camera sees color and light. It's about how you construct a lot of things to interpret how you want it to be. You're trying to find the beauty of what's in front of you rather than trying to dominate it. You're trying to just find the beauty in the room or the landscape and then you want it a little bit enhanced. I don't think you want it feeling real. You want it feeling a bit more rich and lush because that's particularly the world I work in at the moment.

Jon:

How do you work with your DIT and how do you create a show LUT?

Ed:

I build the LUT with the colorist so it is managed through their post production pipeline. For me, the DIT is about managing the cameras, watching out and having your back. Our DIT grades on set to make sure that the shots are matching so that Guy cut is close to the finished version. He sends the CDLs to the post house. The LUT is with the DIT and sent to the monitors. We want to pursue having the LUTs in camera. We're trying to make it work better so the operators have a better view. When you look through the viewfinder, you're like, "Well, isn't framing a response to color and light?" We were talking about this with my operator, saying that digital media has moved the camera operator from the best view in the house to the worst.

In the analog film days, you looked through the viewfinder at the optical groundglass of a Moviecam and the world went quiet. You were absorbed in the image and you were totally there. When the first digital olor viewfinder came out, it was almost like the operator was working almost like off a black and white video tap.

Jon:

You use a lightmeter…

Ed:

I had to upgrade to the Digital Sekonic with a touchscreen. A touchscreen in the rain is difficult, but it goes up past 3200 ISO of the VENICE.

Above: Eiza González as Marjorie Stewart in *the Ministry of Ungentlemanly Warfare.*
Below: Henry Cavill as Gus March-Phillips in *The Ministry of Ungentlemanly Warfare. Photos:* Daniel Smith, courtesy of Lionsgate.

Jon:

Do you control the lens aperture on your two cameras wirelessly?

Ed:

Yeah, we do remote iris, but then sometimes we're strung out and we're working fast, so often I'll just call it out. What I do like about digital and the iris controls is being able to stop pull going through doors and places like that. I love the ability to transition from the exterior to the interior. It allows you to let the subtleties of the light breathe in the room. Those higher ISOs can let that subtlety of the light bouncing somewhere that becomes an edge light. You don't impose an edge light. You're smoothing it out and making it aesthetically beautiful or just making sure it's the right mood. I have to say I find that at 3,200 ISO, I'm on the set and I can barely see anything because the light levels are so low.

Jon:

How did you get started in this business?

Ed Wild, BSC on *The Ministry of Ungentlemanly Warfare.* Photo: Daniel Smith, courtesy of Lionsgate.

Ed:

I started out as a trainee. The industry in the UK was pretty fragmented at the time. There weren't big movies being made, so a lot of it was sort of scraping around. Now, we've got these massive studio complexes. I was just trying to do whatever I could and lmoved up to loading. Mostly commercials and music videos. Then I started pulling focusing. But I really knew I wanted to light. So I bought an Arriflex 16SR2 package and I just got going.

Jon:

That was a great camera.

Ed:

It was basic but brilliant at what it could do. I'm still kind of sad I sold mine.

Jon:

Me too. I wish I had it still it. Is your shoulder still calloused from its flat base? Remember that?

Ed:

I loved the Aaton, the way it sat on your shoulder. But the Aaton was a fussy old thing.

Jon:

It was said that every model was a prototype.

Ed:

Yeah. So, I basically moved into shooting anything that anyone would let me at the time to build up a reel. I did fashion editorials, little documercials, music videos and that led on to commercials. Then, I got a call out of the blue to do a a film, which was the first time I'd really done any narrative. I went for an interview and got the job, which was a horror comedy film called Severance, and it was so out of my genre.

I was so convinced I was the wrong person that I thought they had the wrong reel. It was back in the day of the U-matic. I said, "Can you just show me on my reel what you like, why you're interested in me?" I was convinced they'll put the wrong reel on.

Then I started doing more action films and got busier. Now, I pretty much do just long form all the time.

# Christopher Ross, BSC on *SHOGUN*


*SHOGUN* Director of Photography Christopher Ross, BSC. Photo: Katie Yu. © 2024, FX

Jon Fauer:

How did you wind up on *SHŌGUN* in Vancouver?

Christopher Ross, BSC:

As part of the prep for *SHŌGUN*, as I was reacquainting myself with the jidaigeki (period dramas) of Akira Kurosawa, I remember listening to him speak about his love of long lenses. He spoke about some lens choices on *Ran*, which has some incredibly long lens vistas. And one of the main reasons for those choices was because there was a power station on the horizon on the left of frame, and a cityscape on the horizon on the right of frame, and the sun happened to be sitting right in the middle on a 400mm lens.

We were lucky on *SHŌGUN*. Before I was associated with the project, scouts had been in Japan to have a look, and it was felt that the work required to shoot in the real environments was difficult. And then before they had even made the full and final decision on that, a global pandemic hit, which meant that traveling was incredibly challenging. The decision was made to site the show in Vancouver, and basically recreate the various harbors and bays around Osaka in and around Vancouver Island.

Jon:

*SHŌGUN* was beautiful. In some ways, it almost reminded me of *McCabe & Mrs. Miller* with the rain, fog and mud.

Chris:

*McCabe & Mrs. Miller* was one of our references. I think that one of the important things of the filmmaking process is to try to adhere to some level of reality when it comes to the lives of the people that you're committing to celluloid. In medieval Japan, as well as medieval London, Europe, and across the world, the elements were the biggest battle that humans were facing. As part of our delving into the history, it also felt like a very visceral choice to forge the elements against the protagonists. As well as being in conflict with each other, they're also in conflict with the environment. *The Revenant* is a film that does that beautifully as well. That was another one of our references.

The story of *SHŌGUN* was of a pilot landing, getting shipwrecked in a foreign land and discovering a civilized nation. The idea with our version of the story was to slightly flip the lens on the white savior idea of a civilized Englishman landing on the shores of a barbarian society, and to pitch Blackthorne as much more of a pirate figure, which was much closer to the truth. Sir Francis Drake was basically a very, wealthy pirate, who was the first leader of the Royal Navy. And that's just because he was Queen Elizabeth's favorite pirate.

Part of the process was to immerse ourselves into the Japanese medieval culture and hierarchical society structure and to try and find a way of visualizing the narrative from that perspective, and then to suck Blackthorne into our world. So that was one of the main story cues that we were taking in the project.

Jon:

Let's talk about technical things. Cameras and lenses?

Chris:

For my two episodes (1 and 2), we had five Sony VENICE 1 cameras. We never shot with more than two at the same time, but the idea was that the others could go onto a crane, a cable cam, various stabilizing devices, a Steadicam, as well as regular studio mode. The idea with so many cameras was to be able to daisy chain, to prepare cameras for all the different setups in advance.

We shot quite a lot of the work with a single camera. For example, we would do a single camera crane shot, then a single camera Steadicam, then a single camera gimbal, then a single camera on dolly or tripod. The idea was to keep us rolling, keep us shooting. We also had a great second unit DP and camera operator, Jan Wolff, who got up very early on lots of mornings and shot scenics on the water, in the harbors, doing a lot of environmental work and time-lapse work.

In addition to the Sony VENICEs, we had a Sony FX3. It'd just come out at the time, and I had borrowed one on my previous film. Then I bought one myself. We used it on SHŌGUN for some time-lapse and wagon wheel shots, and places where you'd drop in a camera and leave it running to add to the texture of the edit. The FX3 was not used extensively, but I like having it as just as a run and gun image-maker.

William F. White (a Sunbelt Company) in Vancouver were very supportive. They really supported the show and facilitated probably the largest lens test that I had ever embarked upon, which was great. It was an of technological challenge, in that when I first started talking to Jonathan van Tulleken (JVT), the director, and Justin Marks the showrunner, there was quite a lot of talk about first person storytelling. I knew that we would be doing would be putting Blackthorne front and center, and tracking with him, center punching on a Steadicam and feeling the world surrounding him on a wide lens. Stylistically, in a slightly less enhanced perspective methodology than the Revenant, it was in the same ballpark.

But at the same time, we had a large number of dialogue scenes with six or seven characters, with multiple eye lines, trying to navigate a balance between this very visceral first person perspective, and then a very confrontational series of scenes with heavy dialogue. The brilliant Helen Jarvis was the production designer on the show and in the run-up to shooting, we had lots of conversations about how we could show this world. We'd obviously had loads of conversations about the finishing of the sets and what she and her construction department were working on. And JVT, the director, felt it was really important that we had a large number of tone meetings, where you talk to the executives and to the other HODs (Heads of Departments) about what the show is going to feel like, what it's going to look like, what everybody's going to bring to the table, what the costumes are ... and everyone has a presentation of all of the elements.

But that's still quite clinical, because weirdly, the one thing that you don't have in those circumstances is the cast. So you have lots of these amazing drawings of sets and great drawings of costumes. But actually, there's very little three-dimensionality to those tone meetings. JVT decided that we should create a show reel for the look of the show. So we embarked on an elaborate lens test to start off with, which was incredibly informative.

I looked at a huge array of spherical lenses with great close focus, because again, we thought we might be on a 14mm Full Frame lens at 18 inches. I tested a huge number of lenses: Master

*SHOGUN* - "Anjin" - Episode 1. Hiroyuki Sanada as Yoshii Toranaga. Photo: Katie Yu/FX. © 2023, FX.

Primes, Super Speeds, Masterbuilts, Vantage V-Lites, Cooke anamorphics...a huge array of lenses.

We had a partial set with the shoji screens and one of our Set Assistants was dressed like a samurai so we could see what it was going to look like. William F. White had just taken delivery of their first set of Class-X lenses from Hawk, which are halfway between the V-Lite 2x anamorphics, and the Vintage '74 anamorphics. They're slightly flarier, slightly softer, and they have an incredible close focus. I think the 35mm focus is down to two feet, which is pretty much in the world vintage spherical. I figured that would be pretty good place for us.

We shot the lens test, and everybody loved the textural smushiness of everything. Then embarked on a tone test and shot short studies of each character in small two wall versions of each of their sets—Mariko's bedroom, Muraji's room, Toranaga's meeting room, verandas in the village and Toranaga in full regalia with his kestrel on his arm.

Jon:

What lenses did you wind up with?

Chris:

We had one set of Hawk Class-X, one set of Hawk V-Lites, and a set of Vantage T1.0 spherical lenses.

I thought that combination of the Class-X and the Sony VENICE was really the thing. From a texture perspective, we also used LiveGrain, a grain application software to help layer in the atmosphere that we were adding on set.

I have to tip my hat to the SFX team. Cameron, who was the SFX supervisor, and Albert who was our on-set lead SFX Tech did the cinematographers of *SHŌGUN* a huge service by always having the smoke in the right place, always feeding in. What we had was a really beautiful even layer of Artem white smoke in the background. And then at the same time as that, they were also feeding all of the gas burners that were on set around the villages. We also had a mix of black smoke and white smoke from the Artem Exterior Smoke Machines. That layering added to the three-dimensionality of the show.

Jon:

How did you get the opening scene where Blackthorne's ship is coming through the dense fog?

Chris:

That was a wonderful three days of pre-shooting. It's Muraji on a place called Long Beach, near a wonderful surfer's paradise called Tofino on Vancouver Island. It's the most amazing place.

A million years ago, it probably would've been attached to Japan. We had three boats out on the horizon with naval foggers, and they did figure eights around each other, to bring in as much fog as possible. The wonderful VFX team led by Michael Cliett, filled in the gaps and softened off the edges where we hadn't quite managed to get the smoke.

It's the first time I'd ever seen an SFX team just nod their heads

and go, "OK. We'll fog up that 2 km beach. Yeah, that won't be a problem."

We were blessed with wind in almost the right direction. As is always the way, a huge amount of luck plays its part. We didn't get so lucky the next day when we shot the scene with Toranaga on horseback with his kestrel, lecturing his son about becoming a great leader. The idea for that scene was to be blanketed with fog. We'd found a low-lying area that used to be an airfield on Vancouver Island that we thought would catch the the smoke in much the same way as the beach had on the previous day. And then cut to a blisteringly sunny day with winds so strong that we could hardly even lift the Technocrane arm off the ground. You know, the best laid plans of mice and men, but the scene is still evocative.

Jon:

Since V-Lites and Class-X are Super35 2x anamorphics. But you were shooting Full Frame on the VENICE?

Chris: Well, that's where it gets a little confusing, because FX and Hulu are not huge fans of 2.39:1 anamorphic delivery.

They'd much rather you produce a 16:9 show. I had shot a show for them a few years previously, called Trust. And I'd had a similar conversation about 2.39:1. Danny Boyle wanted to shoot it spherical, but still in the 2.39:1 format, and we'd settled on 2:1 as the maximum. That was the same scenario with SHŌGUN, but we also had a 4K finish. So we had to create our own bespoke set of frame lines, essentially. We shot with the open gate 6K sensor to get the image height, and then took the 2:1 out of the center of the 6K crop. It's super-duper 35mm. Not quite Full Frame, but not quite Super35 either.

Jon:

What should we call it? Ultra Super35? Duper Super35?

Chris:

The consequence of that logistical decision was what has led to the beautiful Petzval style swirliness of the 35mm Class-X. We also use the 28mm and the 35mm, the wider angle lenses, when we were using them in the visceral Blackthorne storyline, to give a swirliness around his closeups. And then as you progressed up the focal lengths, the edges became that little bit flatter, we could frame more off center and put faces just in a hint of the swirliness.

I think it's got some character. It's always hard to know, when you do something a little on the edge, whether audiences will respond.

Jon:

Your close-ups with natural candles or lanterns, for example the interiors of Osaka Castle, are super tight, and lit from one side. Your depth of field must have been...

Chris:

Pretty much razor-thin. And it's one eye, depending on where in the frame that eye sits. Really, it's tricky. You've got to balance. My feeling is that pulling focus is probably the hardest job on a film set, by a long way. It's super stressful and a total art form. I think, as a DP, you have to be challenging from a creative aesthetic perspective, and you also have to be supportive from a technical perspective. If you are making choices about shooting at T2.3 or even T2.8 on those lenses, it is challenging with shortsided framing. You have to understand that maybe you've got to go again.

The whole camera team did a great job. I had the easy part, in a way. Episodes one and two were kind of a West Wing-style character development and build up, with some added action sequences. And then from episode 3 onwards, it's just all-out war, in the mud, 200 samurai every day. Aril Wretblad, the Swedish DP who shot episode 3, was right in the trenches in mid-November, just as the rain really settled into Vancouver.

I got away super lucky. In my two episodes, I was trying to eradicate the sun as much as possible when it was out in September, knowing full well where the story and the reality of Vancouver was heading. And then, by the time Sam McCurdy was halfway through his tenure, he was just desperate for the snow to subside, so they could get out of the studio and onto the back lot and back out on the locations again.

Jon:

Why didn't they stay with one DP through the entire series?

Chris:

The way these big shows have to be scheduled is such that the shooting machine has to just carry on. Justin and the writing team wanted to work sequentially so that they could address the later episodes as the earlier episodes were being photographed. For most of my shooting schedule, Aril was in town prepping with Charlotte Brändström, the director of episode 3.

We were shooting while they were prepping. That was great, because it meant Aril and Charlotte arrived maybe just after our first week of filming and they could be around the studio to absorb the way we were doing things, to see what it was like on the floor. They could meet all of the cast members, and really get stuck in with their episode. So the great thing about big TV is that you do get this great prep time, where you can really involve yourself with the world you're filming. From my perspective, I finished the project in the summer of 2021.

Jon:

Please talk about the look of *SHŌGUN*?

For me, the driving force of the look of *SHŌGUN* was generated in some great, very long meetings with Helen and with Carlos Rosario, the costume designer, and then working with David Tickell, the gaffer, with little models of the set. We had Dedo Light to represent a 20K, and a small light panel as a softbox. We could really model what the light would do on the stage environments, and make some plans for the lighting of the show.

What was really interesting, talking to the Japanese historians and to Helen about the design of Japanese buildings and Japanese architecture, was the concept of the shoji screens as a diffusion material to soften the sunlight. The use of the engawas was interesting. They are verandas that run around the edges of the building to exclude sunlight from hitting the walls of the interiors and fading the various dyes that were used at the time.

There's a lot of wood paneling in the show. One of the fascinating things about the light is that the ceilings are generally very dark wood with inlaid gilding. And tatami mats, which are bamboo

*SHOGUN* - "Servants of Two Masters" - Episode 2. Cosmo Jarvis as John Blackthorne, Anna Sawai as Toda Mariko. Photo: Katie Yu. © 2023, FX.

with cotton sheeting on the top, are like a muslin bounce on the floor. So there's almost an inverse concept of Western room lighting (from above) that we know and love from Gordon Willis, Conrad Hall and others.

One of the things that we played with was pushing volumes of light, creating the idea of a soft sun with a softbox that has a lot of punch to it. It's halfway between a hard light and a soft light, to reach deep into the rooms, to have as big a fall off of inverse square law exposure as possible, as well as utilizing the occasional hard sun for bouncing purposes, for edge lights and various things.

Jon:

So, a big light coming from outside through the shoji screens?

Chris:

Yes, but by pushing the shoji screens open, and then using the opening with a softbox behind. So you almost get a double diffused light with the light coming through the open gap in the shoji screens having a slightly harder quality, and then the shoji screens add to the diffusion at the edges of the room. David Tickell, the gaffer, and Jarrod Tiffin, the rigging gaffer, were really great. They're among Vancouver's top team, and I was very lucky to meet and work with them. Vancouver as a city has a very sustainable working methodology. *SHŌGUN* was the first film where I worked almost exclusively with LEDs. I would say that 99% of the show is LED.

One of the challenges on the show was that Osaka Palace and the ceremonial meeting hall were both big set builds. But, in addition, those interior set builds, we also had gardens that flowed onto the backs of the sets, and had many scenes in those gardens. So one of the lighting conundrums was how to accurately and aesthetically light the interiors, whilst also dealing with the gardens.

On each of the sets, we created five 8'x20' softboxes that could be either top lights or sidelights, but were predominantly sidelights, that were on a gantry that could revolve around the garden so that we could always have them as a three-quarter back soft sun. They were powered by Studio Force units from Chroma-Q (3,000K - 6,100K CCT). These softboxes gave us quite a versatile color temperature flexibility, and with a lot of punch. We had front skins for the softboxes in silk, half grid, full grid and Magic Cloth. So we could vary the diffusion materials, we could create the idea of the sun through clouds, sun through heavy clouds, sun through wispy clouds, and so on. We had those on both of the sets and they were remarkable.

There are a lot of samurai in the gardens with high-sheen armor. So we also coated the "sky" with a charcoal grid cloth, so that we can have gray rather than white specular reflected highlights.

One of our challenges was that the garden was a real garden. The rigging grip team did an incredible job of building a gantry so that we could push the softboxes forward and back towards the engawas, up and down. If required, we could push them horizontally, straight through the room, and then use a T-bar in the room for the wrap.

But if we needed to shoot under them, they could disappear up, and just give me a 45-degree half top light, half back light. It was

a great process. And we had one of the DeSisti Storaro Aurea full-circle Muse lights. David, the gaffer, had used one on his previous project.

Jon:

On the night interiors, you have flickering lanterns in the shot. Did you light with those as practicals?

Chris:

We had a very interesting and quite a long discussion, actually. *SHŌGUN* sits in an era where there are very few instances of art and historical documentation that can advise as to exactly what things were being used as light sources. But the one thing that we knew was that there was a tendency in the countryside to use little rapeseed oil lanterns. They're probably the most dangerous thing to have on a film set, which is simply a saucer of rapeseed oil with a single wick inserted into the oil, sitting on a little bamboo tripod. In some of our scenes, we needed 40 or 50 of these things, and there were 200 samurai swinging their katanas around.

The brilliant prop department worked on creating the ceramic bowls and a resin rapeseed oil. And then the practical lighting team created little rubberized LED stubs that had four mini LEDs that were effectively eight channel lighting fixtures that we could randomly flicker and control. If we had one of them up against the wall, we could dim the back, so that the wall didn't get too bright, but have the light coming out of the front side.

As an extra little touch, we added a phono jack to the saucer, so that we could have an extra channel of dimming. David, the gaffer, and I carried in our pockets little strips of LEDs with a Velcro back and another phono jack. If we needed to light someone in a wide shot, where we just needed to enhance the candle light or the oil lantern light, we could plug it in and aim it in the right direction.

The desk op, Brett, didn't thank us for it, because it was a couple of universes of dimming for the ceremonial meeting hall. But yeah, I think it worked really well. And then, the SFX team created a couple of gas-powered versions, so that we could pop them in the foreground of the occasional shot and have a real flame in the foreground, with the artificial flames in the background flickering away. Hopefully, the illusion works with the audience.

Jon:

Certainly. Getting back to the VENICE and the lenses, did your wide angle lenses vignette in Duper Super35?

Chris:

There was something like a 90% crop for the 28mm, and slightly less, about a 95% crop for the 35mm, and 97% crop for the 45mm. And then everything else upwards worked exactly right. But it was because we were oversampling the negative, basically. Actually, we had different frame lines. On the clapper-board, it would say 28 mm = 90%, and the frame lines would be built into the camera. So whenever we did the lens change, we'd change the frame lines. Now, it would be super easy, because Sony has a great frame line generator, and you can generate any random thing. But at the time, we had to create them ourselves.

Jon:

You were an early adopter of the VENICE on this show. Did you have people from Sony there to help you with some of these technical things?

Chris:

One of the reasons I wanted to use the VENICE was that the film that I had just photographed in Turkey and the UK was called *The Swimmers,* and that was my first experience with the VENICE. And I loved it. I'm quite techie. I used to be a camera technician at Panavision in London.

The first eight years of my career was at Panavision London, under the tutelage of the great Jim Budd, who was the technical director there for many years. I was quite at home reading a Jon Fauer manual about the 435 camera. In the late '90s and early '00s, that was my homework, reading your 16 SR3 and other books.

Jon:

Thank you. You know, one of my mentors on writing camera books was David Samuelson who wrote the Panavision books. He said, "You should do one for the 16 SR," so that's how it started.

Chris:

I was always quite an experimenter when I worked at Panavision, and I've brought a bit of that experimentation to my filmmaking. I feel like you've got to have a full knowledge of your paintbrushes to do your work.

Jon:

Do you operate yourself?

Chris:

I tend to operate. I didn't on *SHŌGUN*, because we wanted the operating style to flow through the 10 episodes. But on most of the work that I do, I operate myself. So yes, I had a very tactile relationship with the VENICE. When I embarked on SHŌGUN, I shot a comparison test with the VENICE and other cameras. But for me, the VENICE and the Class-X were just such a great combination. That was the choice, basically.

Jon:

How did you rate the VENICE for day and night? What ISO?

Chris:

It was the VENICE 1, I rated it at 500 ISO for the daytime scenes and 2,500 at night and dark places. The film in Turkey was even more visceral an experience, from a filmmaking perspective, than SHŌGUN and we shot every sunset that we could get our hands on, and every blue hour. I was constantly pushing the boundaries of the exposure range. We were recording X-OCN LT.

Jon:

How much time did you have on prep, choosing lenses and equipment?

Chris:

It was around about 10 weeks. The first four weeks of prep were an immersive experience in catching up with everyone about the style of the show, the world of Osaka Palace, the exteriors, et cetera. And then an intense last five weeks, where we did the bigger tests and made some choices.


*SHOGUN* -Director of Photography Christopher Ross, BSC on the dolly. Photo: Katie Yu. © 2024, FX.

Jon:

Those choices carried through the whole series? No one said, "Oh, I don't want to use VENICE. I want to use something else?"

Chris:

Not on *SHŌGUN*. But that can happen on some shows. It has been known that DPs make a change, but I think they were all happy with how we started. Remember, this was in 2021. There was a requirement of 4K in the 2:1 aspect ratio, and we would've required expanded lenses in Full Frame / Large Format. Lots of people have fun with expanded lenses, but I find that they generally change the character of the original glass. And you lose a stop or two. There's all sorts of versions of expanded T-series or B-series anamorphics from Panavision, or lenses from other companies. Usually that expansion is done with the addition of a 0.7 KIPON adapter, a 1.2X doubler, or something like that. That, for me, has a negative impact on the character of the lens.

So on balance, when we had all of the various requirements plus the great aesthetic of the Class-X lenses on Sony VENICE, those for me were the hero combinations.

Jon:

Was the exterior of Osaka Castle a set built on a back lot?

Chris:

The gardens are all interior on a sound stage. And the high walled area, for all of the big samurai entrances and exits on horseback, were at the back lot in Vancouver. Osaka Harbor was built on the water's edge, and then Osaka Palace was built just 100 meters away.

And then in VFX, the two were separated for the bigger journeys. From an art department perspective, it was an incredibly complex piece, where a lot of the interior sets for episodes 1 and 2 were then recycled with walls shifting around, and patterns being changed, and gardens being redecorated for other palaces in the other episodes.

At the same time as that, there was a huge amount of back lot work, such as the galleons up against a blue screen at one particular back lot, and then the village was at a secondary back lot, and then the army encampments were on a third back lot. It was a veritable location frenzy. And the show also included 200 samurai on a daily basis. I've never seen quite so many trucks and teamsters to help the unit get about. I think we had 70 trucks at unit base on a daily basis, because we had so many costume trucks, so many hair and makeup trucks.

As an example, every samurai is wearing a bald cap, and a wig. They would spend at least 90 minutes in the chair. And that's every background artist, as well as every cast member.

Jon:

Were the samurai actors from Japan?

Chris:

Many of the background samurai are from Vancouver. When I first joined, that was when Samurai Bootcamp started. For eight weeks before the shoot, in the car park at Mammoth Studios, there were 100 samurai practicing katana, practicing how to march, how to

draw a blade, how to sheath a blade, all that stuff. It was incredible. The detail in terms of period authenticity was extreme. We had a wonderful trio of advisors for military, etiquette, and gestures. When tea was brought into a room, it had to be delivered in a very specific way, and poured in a very specific way with a very specific layout. The samurai clothing has a very specific set of restrictions as to how various things are tied, and which layer is visible to the outside. It was an authentic Japanese experience.

It was very interesting working with the Japanese architecture because the rooms are incredibly sparse. We take for granted that somebody sit at a desk with some interesting foreground that is out of focus to create three-dimensionality. If you look at the world of *The West Wing* and *House of Cards*, and the films of Alan Pakula, *Three Days of the Condor*, or *Klute*, there's an incredible depth to the imagery, and that's created by playful use of foreground-background.

In the world of our architecture, all of the items that are in a room, in the Japanese tradition, are against the walls, away from the center of the room. One of the things to discover in the visual language was how to utilize characters to create that three-dimensionality. So in the dialogue scenes, we tend to be moving through the architecture, and moving past the backs of other characters in the scenes, to create that three-dimensionality, and then jumping inside for a more visceral first person close-up.

Sometimes you have to allow your work to be a discovery rather than to be a determination. One of the things that I really loved about working on *SHŌGUN* was taking a journey of discovery into medieval Japan, and reveling in its idiosyncrasies in terms of its light, its architecture, and its personality of character. And then trying to build the aesthetic of *SHŌGUN* around those discoveries, rather than trying to just apply an aesthetic to the show.

Jon:

Creating that look, did you develop a LUT from the beginning?

Chris:

We had a bit of a combination LUT utilizing LiveGrain software, and the great work of Élodie Ichter at Picture Shop, who colored the first five episodes of the show. [Élodie is now at Light Iron.]

I quite like the primary LUT of the show to be a film emulation, a celluloid style conversion curve that then allows me to embrace the color changes in the lighting. Sometimes I build a bit of a split tone into the lookup table, and push a little bit of blue into the blacks, a little bit of warmth into the highlights. But a lot of the time, I try to keep the LUT a little neutral and make it mostly about contrast. So that when I'm working on the lighting, it's the lighting that makes the color changes, basically.

I guess it's the sanctity of the print curve, in a way. Most of the work that the LUT was doing was in softening off the highlight roll off, so that we never had any form of over-exposure, clipping of skies—so that the skies always felt gray and muted. Along with that, a slightly softer black that sat in with the amount of smoke that we were using.

Jon:

How did you get into film?

I started off just as a runner. At university, I got a degree in physics, basically because I was told to get a normal degree before embarking on my crazy life of film. When I graduated, I said, "Now I'm going to become a filmmaker." I had no idea how to do it, none of my family were in the business or anything like that.

So I worked as a runner on a few projects, and I was lucky enough to be a camera trainee on a couple of short films, and then on a very small low budget movie. And I met a great clapper-loader who told me to try going in-house and learning a bit more. At the time, it was the late '90s. Everything was celluloid. It was like, "You've got to go learn what an SR3 is, learn what a 435 is," and so on.

I went to a small rental house in London, cleaned a million filters, charged a million batteries, sold a lot of film stock, ran up and down the stairs with 1,000 foot rolls of film in and out of the fridge. Luckily, I was asked to go for an interview at Panavision because they were looking for people to work in the warehouse. I started there as a barcode scanner, shipping and receiving.

The wonderful Jim Budd, who ran the camera maintenance department, caught me reading The Ilford Manual of Photography in between scanning out jobs. I was learning about the Cooke triplet. He just came up to me and started talking about the book. What I didn't realize was that he was the technical director of the company, and that The Ilford Manual of Photography was basically his Bible, and had been when he was my age and getting into the business.

Later that day, I was asked to go and have a quick interview with him. About a month later, I started working in the camera service department. I learned how to hand-build an Aaton XTR Prod, or an ARRI SR3, or a Moviecam Compact.

I had a particular love of lenses, and anamorphic lenses in particular. I was trained by Jim to tune the E series and C series, the Primo anamorphics, all those lenses. Panavision London have an amazing technical team, and I was extremely fortunate to spend nearly eight years in that "film school."

While I was there, I persuaded Hugh Whitaker to lend me a camera and let me go and shoot various things. S I shot lots of tests for various DPs, shot loads of short films, all of which were terrible and pretentious. But one short film caught the eye of a producer who recommended me to a director for a little film.

The little film was called *London to Brighton*. None of us knew what we were doing, but it was very exciting. The director, in the end, was nominated for the Carl Foreman Breakthrough BAFTA Award for his work as the writer and director. That film launched my career as a DP.

Panavision was very much my film school. I was lucky. I was a location technician, so I'd spent six months with John Seale in Romania for *Cold Mountain*. I spent two months in Ecuador with Slawomir Idziak on *Proof of Life*, and two months with Robert Elswit on *Syriana*. Learning from those great DPs was a total privilege and an honor. John was so supportive. I operated my first crane shot on *Cold Mountain*. He just said, "Get on the wheels, kid." He taught me, the only thing that you need to be a DP is a light meter and an opinion. And even the light meter isn't that important.

That emboldened me to chase the dream.

# Sam McCurdy, ASC, BSC on *SHOGUN*

Sam McCurdy, ASC, BSC with Hiroyuki Sanada and Anna Sawai. Photo: Finn King.

# Sam McCurdy, ASC, BSC on *SHOGUN*

Photos and frames courtesy of FX.

Jon:

When were you working on *SHŌGUN*?

Sam McCurdy, ASC, BSC:

I was on *SHŌGUN* during the summer of 2021 and I finished June 30th, 2022. We were on the first incarnation of Sony VENICE.

Jon:

Oh, right during the pandemic.

Sam:

Yep, the only time I've ever had COVID, I got on *SHŌGUN*. Myself and a dear friend director Fred Toye, we were doing an exterior night sequence, and he got it on the first night, I got it on the second night. Thankfully, we were double vaccinated.

Jon:

Did you shut down production then, or what happened?

Sam:

No, we kept going. Fred directed wirelessly, remotely, and I photographed remotely.

We had grade one monitors brought to our apartments, walkie-talkies to an onset PA, and live discussions with the DIT, grip, gaffer, and operators. We had iPads so we could talk everything through. It was really bizarre.

Fred and I have a great relationship and had worked together in the past, so it made it a little easier but production made it work.

Jon:

I remember Joseph Losey telling us that when he was directing "The Servant," he got pneumonia on the job and was directing from a stretcher near the set.

Jon:

Were you in Japan at all?

Sam:

No, unfortunately. We were supposed to originally, but Japan didn't actually open up to people coming and going even on a filming level until the following year.

We filmed in the Pacific Northwest. Principally Vancouver, the BC coastline, Vancouver Islands, the various islands dotted around off the west coast of Vancouver. We saw some stunning locations. And I've shot in Vancouver a lot and they took me to some places I've never been to before and it was fantastic.

Jon:

What about the palace? Where was that?

Sam:

So the palace was all built at Mammoth Studios. It's a Disney orientated studio. They had just finished Peter Pan and Wendy in there, and we walked in with *SHŌGUN* straight afterwards. The palaces were some of the most incredible sets I've ever worked on. They were huge.

We did a lot of interior exterior work. At one point there was a lot of talk that the stages should be wrapped in blue for constant VFX add on, but of course you can't give all of your money over to VFX in this day and age. You have to keep some back. We found ways to have sky backdrops, and they certainly worked really well for the more moodier scenes where you were at twilight, pre-dawn or sunset. We got a lot of joy out of shooting into the backdrops, and we would either over light them or under light them just to feel like there was the right level of sky beyond the walls. And yes, occasionally we wanted to be so wide that you saw the lights in

Two VENICE cameras on sliders. Hiroyuki Sanada as Yoshii Toranaga. Photo courtesy of FX.

the ceiling and we knew we would VFX them.

But with things like that, I've always gone into a show like that and said, "Look, if we're going to do VFX, let's do them." If I tell you that I can cheat the backgrounds and I can overexpose it or underexpose it and make it look like day or night, then let's not make those VFX shots. Let's only spend the money when we want to be huge. I've never seen the sense in spending money on VFX when it's literally going to be something behind my head that you're going to replace. I'd far rather replace something that's on a grand scale.

So we did a lot of work in the studio space to find a balance where I felt like I could shoot realistically. Sunrise, sunset, evening, twilight, nights on the stages with minimum VFX work and marry that. Whenever I've shot in Vancouver, and especially for *SHŌGUN*, it's usually been around the fall into and through into the winter, and it looks stunning. I do love the Pacific Northwest at that time of year. From September through to April, it's got this sheen about it and some might call it gloom, I love it. It's got this gray, blue, silver sheen to everything that I just think looks stunning and utilized that a lot in *SHŌGUN*, and then matching that on the stages even for daytime work. It was beautiful and easy to match an exterior day scene and light it interior day when you've just got that kind of gray clouds cover. It was a real easy match.

Jon:

With all the rain and dampness, how did you keep the equipment dry and running?

Sam:

I think it is difficult, but certainly the crews there have managed to perfect a way to keep things dry. I think you go to Vancouver and you've got a crew that know how to keep a camera and a crane dry.

It can be brutal. On one of the later episodes of *SHŌGUN*, the SFX guys were filling the place with smoke, it was about that 6:30 AM, and a mist was rising up through the trees and it looked incredible. But within seconds, everything was just soaked. You'd feel this mist come up, it rolls over you, and then it's wet and you are wet for the day. There's something about Vancouver rain that gets into places that no other rain gets into.

I've seen ACs on the camera truck, not just with hairdryers and blowers, but with 10K tungsten lights pointing into the back of the truck to warm things through. But they know it so well, they know exactly what to do.

Jon:

Did you have multiple cameras shooting at the same time on this show?

Sam:

It varied a lot. For some of the bigger crowd scenes, of course we would. But for a lot of the principal dialogue, we treated it as a single camera show. If B camera could get in there, then brilliant. From my perspective, we utilized the A camera on a crane

Photo courtesy of FX.

pretty much every day for the location work. You'd find a good spot for the crane, it would sit there all day until you needed to turn around and then you'd just spin it and shoot everything in the other direction.

It became our quickest mode of shooting. We had a 50-foot crane on a little four by four buggy that would go anywhere. It could climb the side of the mountain if you needed it to. So we'd move around with that because, as you well know, moving cameras, dollies, lenses and monitors around in that sort of weather can be detrimental to a shoot. So we really would try and find a spot that we could stay in all day and the crane would drive into position. When it was ready to move, it would drive there and we'd shoot everything off the crane.

We were on Libra heads and the crane was primarily a Techno 50, but we would change depending on where we were. Sometimes it was a Techno 30.

Jon:

Do you operate yourself or do you have an operator?

Sam:

I enjoy operating, but I principally work with operators now. It was a dear friend of mine, camera operator Rodrigo Gutierrez who, in the first week of shooting The Descent many years ago, showed me more as a DP than I had ever learned before. He taught me quickly to became a cinematographer who loves working with operators. It opened my eyes. It made me a better DP because I wasn't trying to squeeze my brain to get my lights in.

Jon:

You're working in the British system where the director's talking more to the operator?

Sam:

I remember director Lee Tamahory saying, "I like working with British operators and I'll speak to the operator more than I'll speak to you, Sam." I replied, "Fine, I've got the perfect operator for you." When you work in the US or Canada, it never quite works like that because there seems to be a very defined hierarchy. But I'm always keen to break that hierarchy down and say to directors, "Look, we do so much work in prep that my principle role is to ensure the movie looks the way it should look."

Jon:

On that note, let's talk about look and how you establish it.

Sam:

Once you are down to the day-to-day shooting, and down to the individual scenes, I think it's important for the cinematographer to conserve and to be aware of the final picture. I don't necessarily see my role as being the instigator, but to be the gatekeeper of the individual shots that build up the individual scenes. We've discussed in prep with directors how the show or how the movie is going to feel. You know if you're going to draw out the photography and if the shots are going to be very singular or you know if

Anna Sawai as Toda Mariko.

you are going to do a movie and it's going to be very, very cutty. So us both the director and the cinematographer are going into work together like that, you trust that that's not going to change. It's for me to oversee the aesthetic and to be able to see to the operators and the technicians there on in. This is how the show should feel.

You should feel on edge. You should feel drawn out and that to me is how we get a movie at the end. My role is to give a director as much space and as much time as possible on a set to not be hurried into making decisions where they're just going to shoot anything that moves so that they've got something to cut together. If I can give them space and time to ensure we do what we set out to do in prep, then I think I've done my job well.

Jon:

How did you prepare on *SHŌGUN*?

Sam:

Because of the timing of *SHŌGUN* and me finishing Peacemaker, a dear friend of mine, Chris Ross, shot the pilots. We all prepped together at the same time.

Jon:

What was the process? Did you reference still photography, Japanese art, movies?

Sam:

Japanese art was the only reference we had for the time period. We had two very dear historical advisors from Japan. One stayed on set with us all the way through, and they were a huge mine of information and incredible to work with.

We would almost get to the point where you say, "Here's a tea service scene and it's at night. Tell me where the oil lamps would be." They knew from historical information, writing and paintings roughly where these would be. Sometimes this was not great for a cinematographer. They were all lighting up the background.

So I would say, "This is historically correct, but I need to see faces. Can I take these lamps and can I put them there?" They would do some research and come back with a historically accurate painting of the oil lamps being placed around the food or on the left and drinking dish would be on the right or vice versa. It became a beautiful collaboration between them and us, the historically accurate and the functioning film crew that it was beautiful to work with because they understood that it was necessary to find something that was equivalent to how we needed to set things up. But it was the same for me. There were times when the advisors would say, "Sam, there is no way on God's earth they would set something like this."

When you didn't have a principle source of lighting, you went looking for other sources. I look for the more obvious or the simpler. I've certainly paired my lighting down over the years, I've become a much bigger fan of less is more, enjoying a world where there's more space on the floor for the director and the camera operators to work in. That might make my job and the crew's job a little more difficult because everything's much further away and has to be worked on from a distance or has to be worked on really close to camera as the camera moves. But it frees us up a lot more.

For example, within their buildings and within their villages, the doors were always open. In the summer they were open to allow the light in and so they could take advantage of the views. And at night the doors would be open because the principle light source would be what was outside, whether it was moonlight or sun. They had burners in the villages that they would be lit at

particular times of the day. To signify when the sun was setting, somebody would go around the village and they would light the torches or burners in the village.

You suddenly became aware that you can tell the time or you can tell the passage of time with light and simply have somebody walking past a house in the deep background, lighting braziers as they go. That would signify a particular time of day and give me a motivation for the light for the next scene in that sequence. We would utilize that on stage as well because all of our dwellings, the palaces and everything, all had open doors. We'd never close them. They always were looking out onto gardens, onto the city walls. Those became good handles to hang the time of day on, and for me to make sure I wasn't completely unmotivated with lighting, that it was not just magically daytime or magically nighttime.

I became a big fan of twisting the schedule so that we could shoot very early in the morning or utilize that time aspect as sunset into twilight. With prep, you would go into those times knowing that this scene had to be photographed in an hour and 25 minutes, and we need to be ready for it, so we need to get over there, we need to rehearse, we need to get everything ready so that you have an hour of shooting. Within the first eight days, the producers, the showrunners, everybody was on board with this so that we got those beautiful times of day.

Jon:

What fixtures did you have for interiors and from far away?

Sam:

At night, our principal lights of choice were the ARRI SkyPanel 360 LEDs. We had a lot of 360s with big diffusers on the front that would then be diffused again as groups. I didn't have a lot of hard sources for nighttime work at all. Nothing direct. Everything became soft. The sensors on these cameras are so responsive that I remember turning to Dave the gaffer one night and asking him what the levels for the 360s were, and they were dimmed down to 5%.

We were using these because they were big, wide sources. For nighttime, you still need a wide source to be able to spread it. So you are either using 18Ks or SkyPanel 360s because they're a nice big source. You soften it, it spreads, it covers a large area, and you are not looking at multiple shadows. We would put maybe three three 360s into a basket on a lift, each of those with a diffuser and then a 20x20 diffusion frame, if the wind would allow, in front of that as well. And even with all of that diffusion, I was still only at 5% or 6% on the heads.

That's at 2500 ISO of the Sony VENICE. And I don't think I ever was quite wide open on the lenses all the time, but certainly, I'd try and shoot around T2.8 ½ or T2.8 2/3. I was only using the SkyPanel moonlights, so to speak, as an edge—never really lighting with those. The lighting would be the braziers, guys carrying torches, and then we would supplement those.

Jon:

And what did you use for fill, for faces?

Sam:

We used a lot of Astera NYX bulbs. They are LEDs, wirelessly controlled, fully RGB, and screw into a regular Edison socket. I could put them anywhere.

We would take a handful and put them either side of the braziers, if we just wanted to extend the length of a flame. We would hide them inside clothing, inside oil lamps and occasionally as oil burners, in the deep background.The SFX guys developed a safe and beautiful way of doing gas powered oil lamps that people could carry. They safely hid the gas bottle inside the tunics and the lamps could be carried around in the background. As the hierarchy grew so did the height of the oil lamps. If you were in a very wealthy palace, they wouldn't have short oil lamps, they would only have tall ones.

The NYX bulb is one of the few LEDs I found that could give a fairly good rendition of fire color. Many others come across too yellow, and there isn't any amber. I also asked Dave and his electric crew to actually take the bulb apart and make it smaller. And they did. They ripped them apart and came back with lights that were tiny and could be hidden anywhere. So we ended up with many different shapes and sizes that were incredible.

Jon:

Night, interior, almost wide open, anamorphic 2x. Your depth of field must have been super shallow?

Sam:

It was. Having been such a terrible focus puller myself, I try to never be that mean. And certainly one of the things I've always said, it's the knowledge. I know that I can shoot wide open. I also know that I don't need to shoot wide open. If all of my lights are at 5% and I'm choosing to shoot at T2.8, I know I can give the focus puller a good T4 just by lifting the overall light levels a little bit. For their pride and courage, very few of them actually come up to you and go, "Sam, can I just get a little bit more light?" And when they do, they can have it. If the focus puller needs another half stop, I can always give it. I'd never not want to be in a position where I'm like, "Nope, I can't do it." It's fun to be challenged.

Jon:

How are you monitoring the cameras?

Sam:

Some directors want to be on set. They don't care what the monitor is, they just want to be close to the actors. If they want to do that. I'll say, "Look, I'll watch the second take with you, but I'll watch the first take in the DIT tent with my monitors." In the days of when we used to rehearse, if you give me a good rehearsal, I'll watch a rehearsal in there and then I'll come and watch all of the takes outside with the director. I prefer being with a director because we're both looking at different things.

I think I must be one of the few DPs now without audio on my DIT cart. I don't listen to performances. I will watch the take and focus on the imagery, then I will go outside and I'll watch the rest of the takes with the director. I know what I've seen in the rehearsal on the first take, I'll give that information to the director and then we can watch the rest of the takes. I know what I'm looking for. They know what they're looking for. Once you start hearing it, you notice fewer imperfections. But also you know if there are any imperfections there, you can point them out to the director.

Jon:

Are you grading from shot to shot or doing it like a one light?

Sam:

I do. So it's an interesting topic because it's something that many of us have been talking about very recently. I don't have a lot of LUTs, but I do a certain amount of light grading. I grew up, not that this is a reason for it, but I grew up shooting 35mm. My background is lighting, knowing what you're lighting without having to look at a monitor. On set, I don't light from the monitors. I'm on set with the gaffer and the key grip and I light a set. I'll light a face. I light everything by eye, check it on my meter. I still have a meter. I'll then possibly go back to the tent and watch a rehearsal through with a second team or something like that to see if there's anything major I need to change.

But I still light by eye, and I still consider that a skill. So, by the time I go back to the monitor, it really is just tweaks. The last couple of jobs I've had HDR monitors and HDR has become my first grade, and then the SDR has become the secondary.

Not that I believe that it's a simple swap over between the two, but I like to view it on a good monitor. I will do a certain amount of grading, but those grading levels tend to be in contrast values, not in color values. I usually have one, maybe two LUTs that I will design at the beginning of a show that are contrast and color. One will be an overall contrast LUT, depending on how heavyweight I want something to be. And the other one will be a color LUT that will just be on how much desaturation I feel a show needs. And that's dependent on the camera, the sensor and the lenses. I don't run with thousands of LUTs. I don't see the point personally because no two days are exactly the same.

Jon:

How do you create those LUTs?

Sam:

I'll shoot something, we'll tweak it with the DIT and then run that all the way through to our final colorist. Siggy Ferstl at Company 3 has been our principal colorist and we will build the LUT. He will send it to the DIT. And I'll make tiny adjustments throughout. I don't rely on grading there and then, and I certainly don't rely on post to do my work for me either. I want the dailies to look good. Again, talking of 35mm, you would shoot something, you'd screen dailies on a midweek evening with the first AC, second AC, the director and editor. I would look at the footage and say, "Okay, I need to be careful of the under exposure on this stock or the over exposure on that stock." You'd make minor adjustments that didn't really affect anybody else, but it affected you, and then you'd watch them again the following week—so I still work like that.

I take all the advantages that digital has given us in its immediacy to be able to figure out those things much sooner. As you're shooting, you'll suddenly go, "Oh, I'm not certain that light has responded how I expected it to, let's change it. Let's swap it out for a different fixture. Let's try it with an extra layer of diffusion." But because I still process things in my head photochemically, I still approach the working machine in a similar way on a day-to-day basis. I want to be able to light by eye. I don't want to have to check the monitor every five minutes, but when I go to the monitor, I'm seeing what I think I've lit by eye. If I need to make some adjustments, then I see them quicker than I would've done if I'd shot on 35mm and made those adjustments 24 hours later.

Jon:

Tell us more about how you work with the VENICE camea.

Sam:

I've done quite a bit with the VENICE and its dual ISO, which I found it really good fun. This was the perfect show to do it on. There was a lot of darkness. But it's easy to say, "You've got this crazy ISO. You don't have to light." You and I both know, of course you've got to light, but actually you've got to be even more clever. Yes, you could put up a one light and go, "We're lit," but when you're working at an ISO that high, that one light, no matter what it is, it's suddenly too bright, no matter what the fixture is, whether it's an 18K or whether it's a flashlight.

When you're trying to find the balance between what you see and what you don't see at night is what I found fun and is what I've found with the greater ISOs as these sensors develop. This is where I'm getting my enjoyment out of learning new things, of learning to light with things that are bigger but have less power. And learning how to light with things when you are in smaller spaces, so you've got to go really small, otherwise it bounces everywhere. And the camera is so responsive that it sees everything.

If you make a mistake, if you haven't flagged, if you haven't netted, if you haven't diffused, with such sensitive sensors, if you haven't lit properly and well, I think it really shows up. You can see that you haven't paid attention to the background. You can tell you haven't paid attention to where that light starts and stops because the sensor's seeing everything. It's seeing things that you aren't seeing by eye. I've walked onto the set a few times, and especially on *SHŌGUN*, where the brightest things in the room were the buttons on the side of the camera.

Jon:

Did you ever go to the lower dual base ISO, 500?

Sam:

Yes. Certainly for daytime work, for most of the studio work, we would do that. But where I found it helpful was again more in the studio work than anything else. We did a sequence in episode 8 or 9 that was basically a 10-page scene that ran at sunset. From the historical facts of knowing that they left the doors open to everything, to look into the outside world, we wanted to have a believable background for this huge sequence. We were never going to have the luxury of having VFX in every single shot, so we had to devise a believable sunset that we could actually start to dissipate as it went through the scene.

These were things that, if I had to go back and do this photochemically and not seeing the dailies until the following day, would've taken a lot longer to do. Suddenly, the photochemical brain looking at a sky and going, "Yes, that feels burnt out, and it feels like it feathers really nicely," and being able to look immediately at what I think I've done by eye, is, for me, the perfect pairing. I go to the monitor and go, "Yep, I just need to bring that up a touch and bring that down a touch, and I believe it."

That's my enjoyment of being on set, and that's how I keep it fun for me.

Jon:

Did you use diffusion on the lenses?

Sam:

No. Since going digital all those years ago, I've never been a huge fan of diffusion filtration. I like to light softly, and then with any reflections, you can take most things out with diffusion on the lights.

If I feel there is help needed within camera, then I actually prefer bringing in a bit of flare, or bringing in a Varicon in front of the lens.

Jon:

Did you have a Varicon?

Sam:

We didn't have a Varicon, but I am a big fan. If we were inside, for example, I get the SFX guys to put a little gaslight underneath the lens, just in front of the matte box, just to have a little something that was real as opposed to something that was obviously diffusion. So I do it in those sorts of ways.

Jon:

You achieved some colors in *SHŌGUN* that I've rarely seen before. Especially the blues.

Sam:

That's how I see Vancouver Island at this time of year. It is also a function of working with production designers, costume designers, makeup artists—you suddenly find a palette that you think is right for the show, that then suddenly fits into the locations and the mood of the story. I think the color palette worked really well for the show.

Jon:

You were shooting Anamorphic, which VFX usually hates. Did you have to do a lot of tracking marks, or how did that work?

Sam:

No, the lenses were carefully mapped. For good or for bad, I seem to have been involved in a lot of fairly heavy VFX shows. There's nothing worse than doing something where you've disregarded the VFX supervisor's advice. Another part of my job is being that good balance between what the show has to look like, and good VFX, and marrying them both and hopefully getting good results, but also knowing their process pretty well.

As long as they've got well mapped lenses, if we're giving them camera and lens information from the particular shots, they're pretty happy. Most anamorphics and most good high-end lenses have a good electronic output that the camera can record, that the VFX guys can take. That makes their job a lot easier, as far as the stop, depth of field, everything else. W recently did Godzilla for Apple, which is on at the moment, and before that, Lost in Space. I said, "This is the shot we want to do. You tell me: anamorphic or spherical, and if we shoot it spherical, please promise me that you'll put the lens flare back in." If the VFX guys say they prefer the shot spherical, and they'll layer in your anamorphic elements, do it.


Alicia Robbins on *Bridgerton*
icefilm

# Alicia Robbins on *Bridgerton*

Opposite: Alicia Robbins, hat backwards, at camera.
Above: Ext. Osterly House, ballroom scenes, episode 302. Photo: Roger Russell.

Jon:

When did you start shooting season 3 of *Bridgerton*?

Alicia Robbins:

Prep started in April 2022. We began in July 2022 for the first two episodes. We do block shooting: two episodes at a time. I did the first block and the third block. It's been almost two years since I started.

Jon:

Why did it take so long?

Alicia:

The writers strike definitely had an affect on post. Changes to the edit that affected the script couldn't really be approved while the writers were on strike. Also, a show like this simply takes time as well to polish. There is a lot that goes into the finishing touches to get it to the caliber that everyone expects. Season 3 began streaming on May 16, 2024. I got to shoot the majority of the episodes this season, so that was exciting.

Jon:

Where did you shoot?

Alicia:

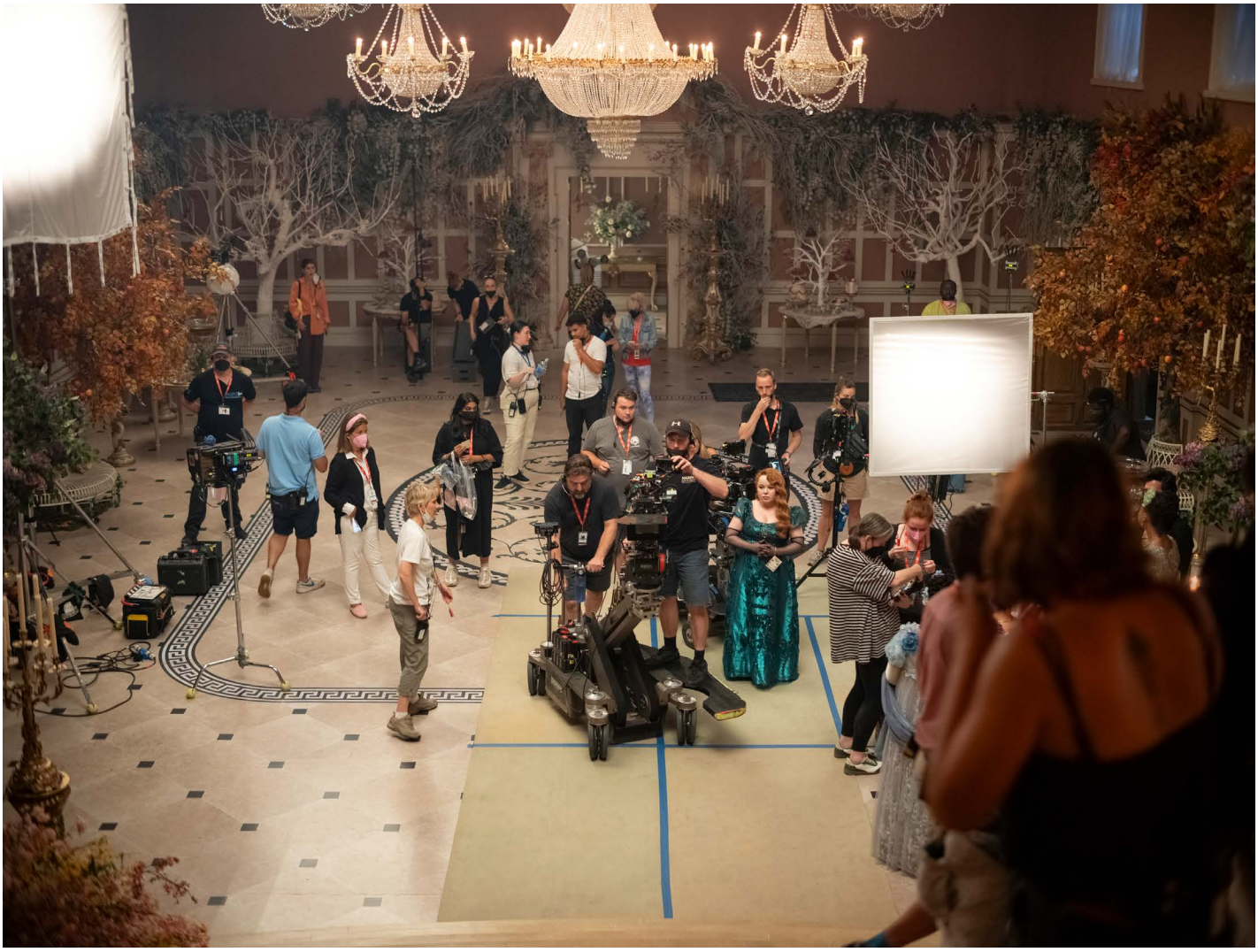
Most of our studio work was in Uxbridge, to the west of London. And we went to a lot of locations. We were at grand estates and manors all over the countryside for various interiors and exteriors. Wilton House is one of the places that we used a lot. You've seen it in Barry Lyndon and many other movies. The location's amazing. It's huge.

Jon:

Where did you rent the equipment?

Alicia:

We got our cameras from ICE Film. It's a smaller camera boutique in London. I think our lighting and grip came from MBS. The last show I did was in Canada, and I think that we used MBS there. It was called Keep Breathing, a six-part miniseries for Netflix. I shot the last three episodes. I was proud of the work that we did. It's



Setup for the Danbury Ball, episode 301. Photo: Laurence Cendrowicz / Netflix.

some of my favorite cinematography.

Jon:

Back to *Bridgerton*, what cameras and lenses we're using?

Alicia:

We use the Sony VENICE 1. VENICE 2 had just come out, so it wasn't ready for us yet. And ARRI Signature Primes were our main lenses. We also had Fujinon Premista zooms that were mostly used for second unit. I didn't end up using the zooms as much because those lived with the second unit, but it all blended really well together.

Jon:

Did you have a lot of setups per day?

Alicia:

We actually did. You would think that it would be less just because of the pace that we had to move. There were so many things that are going into our setups with just wardrobe and corsets. Corsets are a thing. Like when does the corset go on? When can they take it off? And we're timing all that. Because we roll two cameras most of the time, probably between 20 to 30 setups a day depending on what we were shooting.

Jon:

I was going to ask why Primes rather than Zooms, but I guess corsets take longer to change than primes.

Alicia:

The prime lenses were such a quick swap, we were never waiting on camera. It did seem that lighting, camera, wardrobe, hair, and everything timed out in the right way where it felt like no one was really waiting on each other.

We had a really good AD staff who understood working with a period piece, period costume, and period lighting.

Jon:

Were the directors mostly British or?

Alicia:

No. My two directors are from the U.S: Tricia Brock, who actually now lives in London. And Bille Woodruff, who's from Los Angeles local. Jeff Jur, ASC and Diana Olifrirova were the other DPs.

I think a lot of the British crew has gotten used to us, because it

2500 ISO low light setup for interior ball, episode 302. Photo by Roger Russell.

didn't seem like it was a weird thing when I came in and I was talking to my operators about what the shots were and how the camera would move. It felt like I was still working in the U.S.

The only thing different was that the gaffer and the electric team do all the flagging and diffusing. The grips are working with moving the camera. Whereas I only have to talk to the gaffer about the lighting and cutting, which I actually thought was pretty convenient because I didn't have to talk to lighting about one thing and then go over to my grip to talk about the diffusion on the other. It all just happened together.

Jon:

How did you decide on the camera to use?

Alicia:

Actually, that camera was used for the first two seasons, so we just stuck with it. Also, I know the VENICE really well. My last show, the one in Vancouver, was on the VENICE, so I've become used to it. So when I found out that they were using the Sony VENICE, I was actually very excited about that because I'd used it before. And we just stuck with the same, I didn't need to change what wasn't broken.

Jon:

Same thing with the lenses?

Alicia:

Same thing with the lenses. The ARRI Signature Primes they'd used for the previous season.

I think they might have actually used anamorphic for the first season, but then switched to the Signature Primes for season two. I hadn't used those before, but I was able to test them. We had a bit of filtration in the front, but we didn't really go super heavy because the look of the show is crisp. It's a modern take on a period


Flags and lighting for interior day scene at Wilton House, episode 301. Photo by Roger Russell.

piece so we weren't looking to smudge up the lens like crazy.

Jon:

Even though it's a period piece, it looks fresh, as opposed to looking distressed.

Alicia:

It's supposed to feel like a fairy tale. And because there's so many aspects of it that aren't realistic to the time anyway, even the costumes, they didn't have those kind of materials. There's a lot of leeway with what the early 1800s, the Regency period, is supposed to look like. It's a modern take on that time period. Having that clean look was what we were going for.

Jon:

What kind of filters did you use?

Alicia:

We had Classic Soft for most of the filtration. For the second block, I was using the Tiffen Black Fog and Night Fog. But they weren't out yet when I first started *Bridgerton*, and they gave me a whole set when I started the second round, for episodes 5 and 6. I mostly used the black fog.

I used those Tiffen Fog Filters a lot for locations where we couldn't have atmosphere, which was helpful. Because there were a lot of locations that were heritage estates with precious, priceless paintings hanging on the walls, they didn't want us to have ambient atmosphere in there at all. So to help with that, I would use the fog filters.

It helps a lot. I would also use them aesthetically because they are pretty, the way they blooms and have a pleasing softening effect. I ended up using them on Quantum Leap too, just as a diffusion filter. Not just for fog and atmosphere, but actually as a diffusion filter.

Jon:

Have you tried the Tiffen rear filters for your Signature Primes.

Alicia:

I'm very interested in seeing and testing them because I know we'll be going with Signature Primes again, so being able to do a filter on the back would be nice, because you're also not stacking if you have double filtration. One in the back, one in the front, can be very convenient.


Alica Robbins with Signature Prime. Photo by Liam Daniel. / Netflix.

Jon:

How did you rate the VENICE?

Alicia:

The high ISO on the Sony VENICE 1 is great. I used it a lot at 2500 ISO. I even did day interiors sometimes at 2500.

Jon:

That means you had pretty sustainable lighting?

Alicia:

Oh, very much so. Mostly LEDs. I did throw a MoleBeam in there quite often. I love a good sun splash MoleBeam on a back wall. But I like to work at low light levels for the most part. And even some day interiors, I would work at that 2500 ISO if I wanted a bit of a moodier interior. It prevents you having to flag everything like crazy because then you don't have light bouncing all over the room. Also, for nighttime work, just getting a nice balance between the candles and the moonlight and really feeling the candles pop or the firelight pop, I like to work at the higher ISO for that. But it was sometimes a shock to the actors when they'd walk in on the set and it would be so dark you couldn't see anything. But on the monitor, it was beautiful.

Jon:

For the day interiors in historic houses, were you lighting through the windows from outside?

Alicia:

Yes, trying to light through windows. One of the tricky locations was RAF Halton, which plays the interior for the *Bridgerton* house. It has a big white interior atrium space, and the walls are white. And in the past, balloons have been flown towards the ceiling, and I did play a little bit with balloons, but I ended up going with more of the mattress-style balloons so that it was skirted and I could angle it. It worked more as like a backlight versus just an ambient light.

There were huge skylights in the top, so those would get tented completely. And then we'd bring in mattress balloons for angling. I worked MoleBeams or SkyPanels from the upper balcony. Because there really were no windows to light through, you had to kind of fake as if there was a window. So from the upper balcony, I would fake as if there was a skylight coming through with a MoleBeam and just trying to build a little more contrast in that space. It's a hard space to light that way because of the white walls.


Director Tricia Brock and Alicia setting up a shot at the garden party, episode 301. Photo: Liam Daniel / Netflix.

But you'll see some of it actually in the first couple episodes, and you'll see a little bit of a different look for that interior. It's moodier. The whole season has a little bit of a moodier tone to it than previous seasons. We were going a little bit darker and a little bit moodier for the season, so got to play into that.

Jon:

Do they allow lights inside these great homes?

Alicia:

They do. A lot of them will require only LED. There was one location where the works of art are so valuable, they were worried about the heat of tungsten fixtures. So thank goodness LED is around.

For the second episode, the big ballroom scene was at a location called the Osterley Estate. The artwork in there is priceless. That was one of the places that we could not have real candles, and we couldn't have tungsten lighting as well. So everything had to be LED, including the candles.

That was one of the locations where to get the right balance between the LED candles and moonlight, I had to work at super low light levels, at the 2500 ISO base. You walked on set and it was really dark, but the balance between the candle light and the moonlight and the ambient atmosphere light all worked really well together.

That's where ARRI Orbiters ended up being very handy because you also can't rig in some of these locations. You're not going to be able to drill into ceilings, you can't do any of that. So to get a source in there, I would use an Orbiter to bounce into the ceiling or bounce it into the wall and be able to get some of that ambient light back.

I did that a lot throughout the season, just taking an Orbiter, bouncing it into a wall. If it was already a white wall, that was helpful. And then just changing the color temperature on the Orbiter, because it's a full-color LED, let me dial in the color temperature I needed. That was a handy tool to have in some of those locations.

Jon:

For lighting daytime through those big windows, what fixtures did you use?

Alicia:

A lot of times those were just 18Ks. Old school 18Ks and flags. We


ARRI Oribiter bouncing in the Bridgerton Study. Photo by Roger Russell.

had a lot of telehandlers, which is what we might call a Condor. We used a lot of 20x20 solids to block the real sun and then 18Ks to create the fake sun. There was one location though where we ended up going with a 100K SoftSun because it was just easier to get that one source backed up and coming through the windows. If I can use it I do try to get that. But for some of the locations, it was just easier to hit each window with an 18K HMI.

And then inside, I actually loved running around with a seven-foot Hudson Spider because it was so easy to not have to put up a silk, put up the light behind it, then flag it. We would just walk in with the Hudson Spider, with its octagonal shape and a grid already on it. You could just mush it in and be ready for your mediums and your closeups.

Jon:

Did you have a show LUT?

Alicia:

Yes, we did. We actually had a show LUT from the previous seasons that worked really well as a daytime LUT. We had a low contrast LUT. And then I created a new LUT for our moonlight night work, either night exterior or night interior. I ended up using that LUT quite a bit. I created that one with our main colorist Pankaj Bajpai at Picture Shop. And I mostly used it for the second episode. We were looking for a different look than the typical night LUT that we had. I ended up using that for a lot of the episodes, including my second block when I came back. It wasn't so blue, it's a little more on the silvery side. I was influenced a lot going into this by *Dangerous Liaisons*, the 1988 film [directed by Stephen Frears, shot by Philippe Rousselot, ASC, AFC].

It was such a gorgeous film. I loved their night work and even their day work. They had a lot of the sun splashes on the back wall. And I used a lot of references from that for the lighting of *Bridgerton* season three.

Pankaj has been on for all the seasons. And he also did Queen Charlotte, the other spinoff. He understands the *Bridgerton* language, he knows where he can push it and where to pull it back.

I think next season we might switch to VENICE 2 and then we're probably going to do new LUT creation.

Jon:

How did you look at dailies?

# Alicia Robbins on *Bridgerton*

Frames courtesy of Netflix.

Alicia:

Through PIX . We'd get them every day. The turnaround was fast, so I would have the dailies within hours it seemed, after we wrapped. I don't know how they were doing that.

But a lot of times when I was shooting, I didn't really watch dailies because technically I had already seen them. Watching the calibrated monitors I have seen everything that we shot that day.

I've gotten so used to the VENICE now and what it looks like and what its tolerances are, I would light by the monitor and know what it could handle on either end. So I've gotten very used to it.

Jon:

Were you often wide open on the lens aperture?

Alicia:

I was usually at a T2 or 2.8. The focus pullers were great, and they were good at winging it if we had to do something on the fly. But for the most part, we had time to set the shot, figure out the move.

And if it wasn't with our stand-ins figuring out exactly what the blocking was, the actors were really good about coming in and working out the move with the camera operators.

We had great camera operators who really knew how to communicate with the actors and have them run through the move with them. It was a really great crew.

Jon:

How did you get into film?

Alicia:

I grew up in Alabama and I went to Vanderbilt University in Nashville, Tennessee. I thought I was going to be a news anchor. But once I started at Vanderbilt, taking political science and communications, I realized that I wasn't as into it as I thought. At the Vanderbilt television station, I was shooting my own little news segments. One day, my camera person didn't show up. And so the station manager gave me a crash course on the camera and how to shoot with it. "Here's the exposure, here's focus," and so on. I went out and I shot my own segment, and I thought that was way more fun than being in front of the camera.

So I started diving a little bit more into camera, and I was curious about what could I do. This is technical. It's creative. I still didn't really know what a cinematographer was. I loved movies, but I wasn't really sure exactly what a cinematographer was. It wasn't until a movie came through Alabama my second year in college, and it was being shot by Wally Pfister. I ended up being a production assistant on that movie.

I actually wound up asking Wally, "How do I get to do what you do? What do you advise?" He said, "Try to build a portfolio, and then try to get into AFI. That's where I did my schooling." And so that's what I did. Over the next few years at Vanderbilt, I worked at just building my own cinematography portfolio that I could use to submit. And then I got in. I went straight out of undergrad to AFI.

Erik Messerschmidt, ASC on *Ferrari*

On *Ferrari*,
Director Michael Mann, at right,
and Cinematographer Erik Messerschmidt, ASC,
second from right. Photo courtesy of NEON.


Erik Messerschmidt, ASC on *Ferrari*
A
B
J.L.Fisher


Opposite: Michael Mann and Erik Messerschmidt, ASC. Above: Adam Driver as Enzo Ferrari. Photos by Lorenzo Sisti, courtesy of NEON.

Jon:

The colors you achieved on *Ferrari* were remarkable. How did you get that kind of burnt Sienna quality?

Erik:

When we first met, Michael Mann was incredibly generous. He said, "What do you think it should look like?"

I said, "I don't know, Michael. What do you think?"

He said, "Well, I think Italian painting. It should have an Italian painting feel."

He kept referencing Caravaggio, and I dug into it. That's my favorite period of classical painting, the Italian Renaissance, the Venetian school of painting and Italian portraiture. You have Tintoretto and Titian and many more. There are some very consistent things in terms of color in all of that work. The daylight scenes all have this burnt yellow sunlight.

Then I went to Italy to scout with Michael. I had been to Italy before, but I hadn't been to Modena where we shot the film. Modena is in the center of the country. It's in a very fertile plain. It's the breadbasket of Italy, really. The color of the light there is spectacular. It has a really rich honey feel almost. A lot of it has to do with the light. The buildings are all painted. It's plaster of a very distinct yellow, orange, amber, okra palette. So the sun comes in and hits these buildings, and then it comes through the windows in a spectacular color palette.

I said, "Michael, we should lean into this. Look at what it's giving us naturally." He liked that idea. So that's really where the color palette came from. It's very much what that very vibrant place feels like to me when I'm there.

Jon:

When you filmed the interiors, did you gel the lights?

Erik:

I always feel like most of it should come from production design, if possible. So I talked to Maria Djurkovic, our production designer about it, and we formulated an aesthetic plan. One of the things we wanted was to make sure we never saw the color red until we saw the cars. That's really the only time we see that color, and then it is very distinctly represented. The interiors are, keeping with that Italian painting aesthetic, really top lit. It's very simple lighting intentionally, and it's top lit.

I would keep the camera at around 3,800 Kelvin, 4,000 Kelvin. We were shooting digitally. Then I'd put the lights at maybe 3,000 or 2,800 Kelvin. In my experience, that creates a lot of red in the


Above, Adam Driver as Enzo Ferrari on set in Modena. Photos by Lorenzo Sisti. Below: photo by Eros Hoagland. Courtesy of NEON.

Adam Driver and Michael Mann on the set of *Ferrari*. Photo by Lorenzo Sisti, courtesy of NEON.

shadows whenever I do that. So, in grading, we were pulling a lot of that red out, which created the very distinct honey color. Then we would actually replace the red in the shadows with green, pushing a lot of green and cyan into the shadows, and it became a bit of a split tone aesthetic, again, which is a lot of what those paintings look like.

Jon:

Where did you do the grading?

Erik:

Company 3. We had built the LUTs and a color palette. And then, on set, we were grading dailies by creating CDLs, and then they were perpetuated through the process. Ultimately, when we graded the movie with Stefan Sonnenfeld, Michael had gotten very used to the way the movie looked, and he was happy. So we maintained the tone that we had established all the way in early production.

Jon:

And the camera was VENICE, if I remember what you told me last time we spoke?

Erik:

It was VENICE 2, primarily. I shot RED as well, especially in the racing scenes where we needed a lighter weight camera. But the principal cameras were VENICE 2.

One of the main reasons was the dual ISO functionality of the VENICE which was incredibly helpful for me.

Jon: When were you filming *Ferrari*? Erik:

We shot June through October of '22.

Jon:

So, the VENICE 2 camera had just come out?

Erik:

It was brand new. Sony was very helpful.

I had done my research about Michael, and I knew that we would be using many cameras, sometimes five, six cameras at a time, across all of these different environments with a lot of exteriors. Having internal ND filters was very important.

I think we had prototypes of the RIALTO 2 tethered, separated camera head-recorders.

Sony sent us long cables, and Tanya Lyon at Sony USA really took care of us. It was incredible. She's really helpful.

Jon:

Who supported your production in Europe?

Photo: Lorenzo Sisti / NEON.

Erik:

It was Panavision. Well, Sony Japan sent the camera bodies to Panavision in LA at Woodland Hills because the camera crew was from LA for the most part. Both A and B camera assistants came from Los Angeles, and that was great that I was able to bring those guys in. And the DIT as well. So we were well cared for from the production standpoint. And then, the cameras went from Woodland Hills Panavision to Panalight, their agent in Rome.

We prepped the VENICE 2 cameras in LA, the package shipped to Panalight in Rome, and the crew followed. They did the remainder of the prep there, all the accessories, and we met up. We had an Italian C camera assistant, and the seconds and they all gathered in Rome. It was a multinational endeavor.

Jon:

And the lenses?

Erik:

Dan Sasaki did the lenses. The primes were modified Panaspeeds. For the most part, I had a H-series lenses—12 focal lengths. It was a big package. We had a lot of equipment. I think we carried five or six camera bodies the whole time. It was busy.

Then I had a lot of zooms—it was a pretty zoom-heavy movie. Michael likes to work with zooms. So we had 11:1, 3:1, 4:1 Panavision zooms. We also had Fujinon 24-180 T2.6 and 75-400 T2.8 zooms.

Jon:

Oh, the Fujinon Premier Zooms?

Erik:

Yes, the Premiers because they're really fast.

Jon:

So you were shooting in Super35 format?

Erik:

Yes, I would switch the camera formats. I had no problem going that back and forth from Full Frame to Super35, whenever I needed to. In fact, we only shot Large Format when we were in portraiture situations with the actors and we were on primes. I actually found that the expanded zooms were not of high enough quality, really. They didn't resolve very well. The Super35 zooms all matched better. So we would switch when we threw the zooms up or I needed a long lens. I have no problem going to 6K on the camera. I do that with RED all the time. It's whatever package I'm working with.

Jon:

It worked well.

Erik:

I think so. It makes you nimble at least. Sometimes Large Format's depth of field is too narrow for me. Sometimes the lens gets too smooshy, I think.


Photo by Eros Hoagland from the set of *Ferrari*. Courtesy of NEON.

Jon:

Who were your assistants?

Erik:

E.J. Misisco was the camera first, and Alex Scott, who's been working with me for 10 years was the second. E.J. had done other movies with Michael, and Roberto De Angelis was the A camera operator. He had done movies with Michael in the past. So E.J. came with Roberto, and then I brought Alex along.

Jon:

And the focus was great.

Erik:

Yes, for the most part. It's a fast-paced shooting environment with Michael.

Jon:

But it was not documentary style.

Erik:

He wanted the movie to have two distinct styles. He wanted the interiors, the dramatic scenes, which may be the wrong word, but the scenes between Adam and Penelope were to be more classical and more restrained. Then we get to the racing sequences, and the whole film opens up, and then it becomes really visceral and frenetic.

Jon:

It also looked like you had handheld work? Also in the interiors.

Erik:

Yes. They're handheld. We were doing an interesting thing. Michael had developed a technique, I think, on *The Insider* where he started to use the SKATER Scope periscope quite a bit. We put the SKATER Scope on the Steadicam. Essentially, it's pushing the lens about 50 centimeters away from the camera. What's nice about that is you can get the lens over someone's ear or right in someone's face without the sled hitting their knees. You can get the camera extremely close to somebody without the operator being too close. It also throws the lens way out of nodal position, so a tilt looks like a boom move, almost. It has a very different feeling, and it's something Michael really likes. He would use that in moments where he wanted to put the camera very close to somebody.

Jon:

Yeah. He used it on *Tokyo Vice*, I remember.

Erik:

He did.

Jon:

Does the SKATER Scope have a PL mount?

Erik:

It has a PL mount, and Panavision modified their SKATER Scope to take the PV 70 lens mount. Most of our primes were PV 70. So then, if for some reason, we wanted to put a PL mount on there—I think we may have day-played some fast Master Primes or something—we would put on a PV 70 to PL adapter because that works. The flange depth works. Actually, the PV 70 is a really good mount.

Jon:

You mentioned the dual ISO on the VENICE 2. Were you shooting in really low light levels?

Erik:

Well, no. The problem is the SKATER Scope's a T5.6. Usually, I would light the set at T2.8 or T2.8½ at 800 ASA or 640 on the camera. That meant Michael could shoot the zooms, and that's a big reason why I brought the Fujinons, because they're a little faster. The Panavisions are technically T2.8, but I think they look better at a T4.0 to resolve properly. Oh, and we had the Angenieux 12:1 as well. I had a lot of lenses.

So I would light the set to T2.8 or T2.8½, and then ND as needed. Then if Michael decided he wanted to use the SKATER Scope or he wanted to use a slower zoom or whatever, I could pump the

Photo: Lorenzo Sisti / NEON.

ASA up and generally not have to do any relighting because it wasn't realistic to light the whole set to a T5.6, obviously. I did do that in a couple of situations where I had a lot of shadows, for example, if it was really dark, because the camera can get a little noisy at the higher rating. But for the most part, that's why I did it that way.

Jon:

Getting back to the colors, did you have to develop a LUT for the interiors with that burnt Sienna look, especially for the hotel in Mille Miglia, with wood paneling? It was gorgeous.

Erik:

Oh, thank you. Yes, we built a couple LUTs. We built some night LUTs, and then we built a day interior LUT and a day exterior LUT. I thought it'd be interesting to really lean into the hard sun aspect of it. Often, you get in a front light and we bring in 12x12s and we shade it and then you fake it, you bring it back. It's a very different look. There's a part of that Italian countryside where you go out in the middle of the day and it's like this.

So I thought, "Okay, we're going to lean into this sunlight thing." To me, it always helps if there's a lot of color in the light when you do that. For the mid-tones, we would pump a lot of color saturation into the grade. So the LUT was doing that. It's pushing color a little bit on the highlights, mostly mids, and then it's pulling color out or adding some sort of contrasting color in the shadows. It's pretty simple. But, yes, it's meant to be a bit of a throwback. The movie is sort of meant to have a classical Italian aesthetic to it. For sure.

Jon:

It did.

Erik:

Oh, good.

Jon:

Were you there for the grading?

Erik:

I was in and out. This is Michael's film, and he's very involved, but a lot of it was VFX cleanup and stuff he was doing. The grade in the end really followed dailies. But I would go in, and see Stefan, and then they would send me things and I would make notes and they would go back. It was a long process. We graded the movie for a while.

Jon:

If I remember, you like to grade yourself? You have DaVinci Resolve...

Erik:

I do. I feel like I have to understand the tools. I can't just say that's too bright. I want to be able to have a conversation with someone about the tool they're using in the way that they use it. So I try

Photo:Eros Hoagland / NEON.

to learn what secondaries are, what the primaries do, how you key frame and track a window because it helps me understand what other things need to be done in the grade, the process of how colorists like to structure their day. So, I like to grade, and I also like to grade stills or reference stills and then send them to the colorist, and I say, "This is what I did, and this is why I think this is important." Because sometimes the technique is almost as important as the result, I think.

Jon:

Good point. When you grade stills, do you use Photoshop?

Erik:

Photoshop or Lightroom. I actually think Lightroom is a pretty good tool. It feels more like a color correction suite than Photoshop does. In Photoshop, you're starting to approach After Effects and Nuke. It's more like a compositor, whereas Lightroom is broad enough in terms of how you work with it. You can think of it in the way that it manages hue and saturation. It's very similar to the way a DI suite operates, I think.

But, also, I'll just sit there with the DIT. I don't always work with a DIT, but on this movie I did because we were essentially making dailies on the set. We were grading, basically. I'll sit there at the wheels and move the color around myself and play with gamma and say, "I like this, I want it like this," and then he'll go in and clean up all the nodes and make it workable. I like that. I like working that way.

Jon:

What were you using on set?

Erik:

DaVinci Resolve—because Company 3 is mostly all Resolve.

Jon:

Did you load LUTs in advance into the camera?

Erik:

We did.. Company 3 had a color science starting place, Transforms, that they had put together for the VENICE and they sent those. We then modified those and sent them back. Then we built the LUTs for the camera tests that are the base show LUTs, and they went to dailies, and that was what Stefan started with when he did the grade. Then when we put CDLs on top of those. So it was color managed, but it was dynamic, too.

Jon:

Why were you doing dailies on set yourself?

Erik:

Well, we didn't transfer them on the set. But we graded. We built all the CDLs. Whoever was transferring the dailies was just applying our CDLs and not doing any supervision, which is what I would prefer. I would ultimately prefer to just do a one-light.

When I work with David Fincher, it's always just a one light single

Photo: Lorenzo Sisti / NEON.

show LUT, no DIT, very simple, like shooting film. I actually prefer that because then if I overexpose or underexpose something, I see it in dailies if you're screening one light prints. On this movie, it was going to get out of my hands a little faster than it would on something else. So I was protecting the image a little bit more than I normally would.

Jon:

When they're racing through those great Italian trees and it looks like a drone going in and you're zooming back, and then it lifts up—how did you do that?

Erik:

Well, that shot was a dolly zoom is the arm car, actually. It was not planned. I think it was something happened on a reset, and Michael was like, "Oh, I love that. Let's do that again."

Jon:

That must have been a pretty tall arm on the camera car.

Erik:

Yes. That arm will go up like 18 feet, I think.

Jon:

That was a great shot.

Erik:

Yeah, it's cool, isn't it? But there's drone footage in there, too. You're right. There's some drone stuff that gets really high.

Jon:

And in the credits, there's something about a balloon. What was the balloon for?

Erik:

I used a lot of balloons on the movie. I used a lot of balloons for the exteriors, actually. They call them clouds. It was a German company. There are no lights inside. It's like a giant mattress, like a four meter by four meter mattress that you can actually connect together. It meant I could quickly bring in a 20x20 and just put it over the camera or I could shade somebody on the street. I could control the sun. Because I didn't have every kinds of resource.

First of all, the sorts of things we do in the States or in the UK where you bring in big construction cranes and move big construction cranes around, that just wasn't in the cards. The pace of the movie and the way that we were going to cover it didn't allow for me to start parking big, heavy fly swatters outside the shot all the time. I needed a tool where I could really quickly respond, and so I'd bring the balloons in.

Gabriel Leone as Alfonso de Portago. Photo: Lorenzo Sisti / NEON.

For the most part, I could control the sun with this team of very thoughtful, kind Germans who would walk around with the balloons and put them where I wanted them.

Jon:

So they're filled with helium and are tethered?

Erik:

They're filled with helium, and they're about two feet thick. They're like a 20' x 20' frame that floats. It was great. We had a bunch of them. The production manager was always frustrated because every time we filled them, they took five bottles of helium, and the helium was hard to source, and they had to drive to Rome to get the helium. It was a whole thing. But, yes, we used them all the time.

Jon:

That's great. For the interiors, were the lights outside mostly HMIs or...?

Erik:

It was a combination. They were HMI for sure. I love 18K Fresnels. I'm old-fashioned like that. But there are SkyPanel 360 and Vortex fixtures as well. The Vortex are great because they're waterproof.

Then, the church was all 18Ks, lots of 18Ks in the beginning. I love the Litegear LiteMat. It's my favorite light. It's so lightweight and easy to move around if you need to fill somebody's face or something, so we used a lot of those. We would build soft boxes out of those, bay lights, things like that. There's a lot of top light in the movie and a lot of soft boxes inside those. The Italian interiors have 15 foot high ceilings most of the time, so there was lots of room to work above.

Jon:

Speaking of the church, in the story, they're in the church and looking at their stopwatches. How did they know the time on the track?

Erik:

Well, what you're supposed to infer that the track is so close to the church, you can actually hear the sounds from the track.

Which is historically accurate. In fact, you can kind of see it. That's the intention. There's an aerial that shows the church and the track in the background. That's where it was. It was five blocks away. You can't really see that in the film, but that's what you're meant to understand, that you can hear the starting pistol.

César Charlone, ABC, SCU on *Sugar*

# César Charlone, ABC, SCU on *Sugar*

Above: Colin Farrell as John Sugar. Photos © Jason LaVeris, Courtesy of Apple TV+.
Opposite: L-R: Colin Farrell, Dennis Boutsikaris and César Charlone, ABC, SCU with Sony VENICE in Rialto mode, with Preston Light Ranger 2.

Jon:

Please give us the backstory of your filming *Sugar*.

César Charlone, ABC, SCU:

I am very close to the director Fernando Meirelles. He actually flew from Brazil to Uruguay to be the best man in my marriage. He was the one who brought me back to Brazil after I had returned to Uruguay. But filming with him became so frequent that I decided to move back to Brazil thanks to Fernando.

Fernando was involved with Sugar, an Apple TV series, and he asked if I would help him. Of course, I definitely joined him. Fernando knows that I'm not very familiar with detective shows and thrillers; I'm more of a political person. I enjoy very much doing documentaries, political dramas and films that have some kind of engagement. But since it was Fernando and filming with Fernando is such a pleasure, I said, "Yeah, I'll join you." So I went to LA and joined him on the series. We had a very intense preparation to get going.

One of the things that I discussed with Fernando was that since we were doing a thriller, in order for it to be believable, it would be important that we treated it in a very naturalistic way. Because if we went towards the typical film noir, shadowy kind of artificial cinematography, it would be too much staged. So we wanted it to look casual because the temptation would be, especially because he does many references to film noir, that we went in that direction. So it was necessary that we went in the opposite way.

We established a kind of naturalistic, documentary style of cinematography so it would look more believable, not fake. I tried to make it as natural as possible, even accepting what we might call wrong cinematography, like burnt out windows or things that make it look more real.

We would be handheld often . We wouldn't do setups that were perfectly smooth on a dolly. We would be a little bit more improvised to make it look more real.

Jon:

But the moves were smooth and elegant. It didn't look like shaky, handheld.

César:

I tried. I was using an Easyrig and trying to be as stable as possible, but it wasn't planned dollies going from one point to another. It was more casual. If the actor moved, I would move.

Jon:

Nice. Do you operate yourself?

César:

Yes.

César:

I make that an issue because to me, operating is even more important than cinematography itself. It's through operating that I find, even as I change something in the lens, in the light or composition, that I can reframe because of the light. So yes, operating for me is essential. I want, I need to operate.

Jon:

What equipment did you have, cameras and lenses?

# César Charlone, ABC, SCU on *Sugar*


César:

The camera was a Sony VENICE 2. I love its sensor of it. It's very delicate, very beautiful. But I also had been doing documentaries here in Uruguay for some time using an iPhone with the Filmic Pro app and I enjoy that very much. So, since this was an Apple series, I asked Apple if they could lend me a couple of iPhones. They sent us eleven iPhones for the show. And they mixed very well with the story and the cinematography.

Most of the scenes where you see Colin Farrell driving the car, for example, it's me sitting by him with the iPhone just because the possibility that the iPhone gives you, you can move your hand behind the steering wheel and then go in front of the clutch and do all these incredible shots and move around.

I operate with video display goggles to give me the independence of moving the camera in any direction, and the iPhone allowed that. I had a nice kit of lenses that attached to the iPhone—a little tele lens and close focus and things like that. It was very comfortable.

Jon:

Tell us about the eyepiece goggles that you use.

César:

You have amazing goggles these days. On Sugar, I used Epson Moverio Wearables (goggles) that are great, with very good image quality and a huge projected here. You can see focus clearly. They're amazing.

Jon:

But, on *Sugar*, your main camera was the VENICE 2?

César:

Yes. I did a couple of tests and I found it very lightweight. And I also loved the Rialto mode, which was very good for many situations. It allowed me to be very quick, to move around. The lenses I chose also are related to that. I prefer to use zoom lenses rather than primes. And, since you have such good possibilities these day in post-production of playing with the image, making it sharper or softer or adding grain—so, I chose lenses that are easy to work with and practical. I hate to make an actor stop just because I want to change a lens and go tighter. I'll just reframe it myself with the zoom.

Jon:

What zooms were you using?

César:

I had three Panavision 70 Series Full Frame Zooms: 15-30mm T2.8, 28-80mm T3, 70-200mm T2.8.

Jon:

When were you filming SUGAR?

César:

From July until November 2022.

Three cameras, three LR2s, two Easyrigs, one slider. Courtesy of Apple TV+, Photos: © Jason LaVeris

Jon:

How did you decide on using VENICE 2?

César:

It is a friendship thing. One of the Sony technicians is a Brazilian who lives in LA. We know each other from the Brazilian film industry. I got in contact with him and he asked, "Do you want to come over here to the Sony DMPC in Glendale and test a new camera?"

Jon:

Oh, I think I know him. He lived in Miami for a while? Sam Fares?

César:

Exactly. Very nice guy.

Jon:

You had a lot of night shots. Were you shooting at the higher Base ISO?

César:

Yes, the Sony VENICE 2 has 800 and 3,200 Dual Base ISO, with excellent results. No noise at all.

Jon:

What did you use for lighting?

César:

We shot a lot of scenes in big sets on stages at Paramount. We had big lighting fixtures coming through the windows.

Jon:

How did you and the director establish the look of the film? Was it "We don't want it film noir, we want it to look this way." Please take us through that discussion.

César:

Well, I always say that my work is divided 40% into pre-production, 40% post-production, and only 20% on set. The reason is to make the set something agile and quick and easy, to make it easy in what I call the holy trinity, which is script, director and actors. I want to interfere the least amount possible. That's why the zoom lens is there—in order to not have a hindrance.

So in that 40% pre-production with Fernando, we discussed the look. We read the script very carefully, scene by scene. I joke that we read word by word. We look for references. And we move around. Many times, when we get to a location, we open the script and read it through with Fernando. He says, "The actor will be standing here. He will look out the window this way." And I see where I can put a light. I plan in great detail. And I rehearse a lot in pre-production.

Today, because of the iPhones, during pre-production, I even film a lot on location and sit down with the DIT to grade it a little bit, and I share it with the director. "Look, Fernando, this is how the location is going to look with natural lighting." He might reply,

"Oh yes, we can go darker or clearer here." So, I do a lot of rehearsing and practicing in pre-production.

Jon:

Did you establish a show LUT in advance?

César:

No. As we moved, we were finding different moments. As I said, we wanted it as naturalistic as possible, so we went with an analog film approach of just shooting as if for one-light dailies.

Jon:

Do you have a regular crew in LA?

César:

No, they recommended a crew. I enjoy suggestions because it's a

Jon:

You had many night scenes.

César:

When it was available light at night, I would open the lens aperture as wide as possible and ask the DIT, "How are we doing?" He might say, "It's a little bit noisy here," so I'll add a little bit of light there, and so on. I work very closely with the DIT, and also with the colorist. From the very beginning, I establish this triangle that is the colorist, the DIT and me. We do all the testing and rehearsals and find the different looks of the film. And then, when we're on set, we know where we're going.

Jon:

What happens a year or two from now? Is everybody going to be shooting features with iPhones, or what's next?

César:

I think it's such an interesting moment that we're living in. And also, all these platforms. You see kids being able to do little films and upload them to YouTube, and maybe they have bigger audiences than we do in our film. I enjoy that very much, because to me, it's made storytelling more democratic.

Jon:

Were you shooting film as a little kid?

César:

I was very much into still photography. I had my own lab at home. I was very much into photography, but not cinematography. As a hippie high school student, I took a trip through the interior of Brazil, taking pictures of the unfair living conditions.

Jon:

Like *The Motorcycle Diaries*.

César:

Yes. And in one of the cities where I arrived as a hippie, the typical thing I would do was go to the little town square where there would be other hippies playing guitar, smoking pot. I would approach them and said, "Hey, I'm from Uruguay. I just arrived here with my backpack. Do you know some place where I can sleep?" And they would invite me to their houses or wherever.

In one of these places, I met a guy who had a photo lab at home, and he let me develop a lot of the film that I had already taken. Amazingly, he was studying cinema. I said, "Wow, you're studying cinema. That's amazing." So he took me to the film school and I met the director there. I said, "Oh, this is what I want to do. I want to study cinema." So I came back to Uruguay. I finished my

high school in order to get the degree to be able to move on. And I applied to the university in Brazil, and moved from Uruguay to Brazil to go to the film school since Brazil was the only place in South America that had a film school at the time. I moved there in order to study film.

Jon:

How did you know you were going to like filmmaking when you signed up for film school?

César:

I had a commitment, an obligation that came from my generation. We wanted to be part of a revolution. Since guns were not my things, what better way to bring change than with a movie camera? [César points to a photo on the wall].

Jon:

That looks like the famous picture of Jean-Pierre Beauviala with his first Aaton 16mm camera of urban social change held high above his head.

César:

Exactly. That was kind of my relationship. I always saw film as a tool for showing injustice, especially us here, where we live in one of the most unfair continents in the world. It's very sad. In Uruguay, it's a little bit less, but in Brazil, it's a shame, the difference between the rich and the poor. That is something that we inherited from the colonial times.

It's funny, the first film that I did in school was with a classmate. Her father was in charge of the film department of the Jockey Club, because they had a film department in order to analyze the photo-finish at the end of the race.

He had 16mm cameras pointed at the finish line, and he had a lab on site. He was not a film buff at all, but he was a horse specialist and he had 16mm cameras that were used only on weekends, and his film lab was also used only on weekends. So my friend, she told me, "My dad could lend us a camera during the week." That's how I did my first film with cameras from the Jockey Club in São Paulo.

We used leftover film—short-ends—because they would load a full reel in the cameras and shoot. When the horses arrived, they cut. So they had leftovers.

Jon:

And then, did you stay in Brazil, or did you move back to Uruguay?

César:

The idea was that I would film, study four years in São Paulo and go back to Uruguay to do the "revolution" with my camera. But in the middle of those four years, Uruguay had a dictatorship and lots of my friends and colleagues were put in prison, lots of them fled, some of them disappeared. So there was no point of me going back to Uruguay at that point. I ended up staying in Brazil. And then, things happen, you get engaged, you go and live with somebody, you have a son. And then, at the end of the story, I was half Brazilian, and I did my career there., based in São Paulo?

Jon:

What was your first film camera?

César:

I bought a little Aaton A-Minima. But I got the A-Minima when I was already very established. I was quite late.

César Charlone, ABC, SCU at left. Photo: Apple TV+ © Jason LaVeris

Jon:

How did you get your first job after film school?

César:

It was very interesting because when I left film school, I had a teacher who was a chemical engineer running the Brazilian film lab. I admired his class very much. After graduating, I went to him and said, "I've learned everything that I have to learn, but I have no practice because we didn't get cameras at school, so please help me get work." He recommended a place that used to do newsreels for cinema. That place was self-sufficient. They had cameras, film, lab, editing, because they produced, filmed and released everything.

I worked there for three months. And, because this place was the only place that had anamorphic lenses for tabletop, a guy came from Rio de Janeiro to do animation in anamorphic. He was a young guy who had opened a production company doing short films and commercials. We met, and he was hiring all my photographers idols. All the guys that I had grown up admiring were working for him in commercials. So I said, "Listen, I'll sweep the studio for you, whatever you want."

His company was in Rio de Janeiro, so I moved there. And that is how I had the chance of being assistant cameraman to Dib Lutfi, the cinematographer of Glauber Rocha, Mario Carneiro, my heroes. I was very lucky.

Let me tell you another funny story. I was starting as a cinematographer in that company. Nobody knew us; we were a very small company. One day, they went to a big agency, J. Walter Thompson, to ask if they had some commercial work for us. The Thompson people said, "We're trying to do a commercial about a guy who fishes for marlin on the open sea. If you have scenes of a marlin jumping out of the water, we'll give you the job."

So, it happened that there was a fishing championship in the north of Brazil. I went there and sat on top of the yacht where they were fishing and I would film. Now, the funny thing about marlin is that when it bites, it takes the line into the water, and then, it jumps up somewhere completely different because the line goes under the water, so you're pointing where the line goes, but then it surfaces elsewhere. I spent two days and I never got a shot. It was a two days championship, Saturday and Sunday. On Sunday at three o'clock in the afternoon, I took a guess and I was filming slow motion, and there beautifully, the marlin just comes into my frame. I got it.

After that, they gave me a huge commercial for JWT and my life changed because of that marlin. I owe my career to that fish.

# César Charlone, ABC, SCU on *Sugar*

Above: César Charlone, ABC, SCU on camera and Director Fernando Meirelles at left. Photos: Apple TV+ © Jason LaVeris
Below: César Charlone with VENICE in Rialto Mode on a monopod.


Checco Varese, ASC on *Under the Bridge*

# Checco Varese, ASC on *Under the Bridge*


Opposite and above left, Checco Varese, ASC. Photos: Darko Sikman. courtesy of Hulu.

Jon:

Tell us about *Under the Bridge*.

Checco Varese:

I read the script. It was interesting in that it was not a police procedural or 12 angry men in a jury. We were doing a human story. It was a story about belonging or not belonging, about pertinence, about racism. There is a clash of cultures and a lot of layers, but the layers were subtle in the script. Then I met the director, Gita Patel who was very visual and passionate about the story. The confluence of all those elements made me interested. And then you know me, it's a pilot, or prototype as it's often called, so I jumped on it and we did it.

We shot in Vancouver because it happened in Vancouver. That was very refreshing actually, to shoot something where it happens. Too often, we shoot Toronto for New York, Budapest for Miami, Miami for Albuquerque, Mexico City for the moon. Finally, I'm shooting in Vancouver for Vancouver, which was refreshing.

Jon:

By doing the pilot, the prototype, how did you establish the look of the show?

Checco Varese:

I can happily say that I set the look for the prototype, the pilot. Yes.

Jon:

How did you decide on that look?

Checco Varese:

Well, you tell me please. I'm a very bad judge of my cuisine. We shot with the Sony VENICE 2. How detailed you want to go into technical details?

Jon:

Oh, FDTimes loves technical things.

Checco Varese:

I'm agnostic about cameras. I shot projects with ARRI, with VENICE, with RED, but in this particular case, and for the last few years, I've been a big fan of the Sony VENICE for many reasons. I think they've done a great job in their color science. The colors are wonderful. Vancouver is very green and the skin tone of our main character is darker olive. Remember when you and I used to talk about Fujifilm and Kodak?

Checco Varese, ASC, handheld. Photo: Darko Sikman. courtesy of Hulu.

Sony colors are very beautiful for everything. It's like splitting hairs between the major camera brands, but Sony has a tendency to handle the greens very beautifully. And then it has all the things that my assistants want, it has many little buttons that you touch to change settings. I don't even know what they do, nor that I care. But the rendering of the dark, the shadows and the rendering of the highlights is great. Especially because the main event in the film happens at night under a bridge. I'm not going to spoil the story.

I needed a camera that could keep the darkness, sensual and scary at the same time, but also I needed a camera that I could work with at 3,200 ISO and still have an exposure. So that was the reason to choose the VENICE 2. And then, I also use another camera in the Sony Cinema Line, which is the FX3. It is a small camera that looks like a mirrorless still camera, but it's a true 4K Full Frame Sony cine camera. I used it in tight places with E-mount autofocus lenses. It was amazing. When I gave the footage to my colorist, he asked, "Is this the same camera?" Yes it is.

Jon:

What about lenses?

Checco Varese:

I did a lot of testing, and as you know me, I'm also agnostic about lenses. I just finished a project with the Leitz cine lenses. Before that I did some ZEISS cine lens projects. For *Under the Bridge*, I used the Angénieux Optimo Primes.

Jon:

You used Optimo Primes before?

Checco Varese:

I have done three productions with Optimo Primes. The first was *Daisy Jones & The Six*. The second is this one, *Under the Bridge*, and I'm shooting a pilot now in Miami with Angénieux Optimo Primes. I think they're wonderful lenses.

Jon:

Why haven't we seen them on more films?

Checco Varese:

Well, they are still very young lenses. They're like two and a half years, three years old. As I told the team at Angénieux, "If lenses were to be compared with wine, Optimo Primes would be the champagne of lenses."

They have a bubbly, sort of irreverent quality. It is interesting to use them and to have that naturalistic quality, not documentary, but natural style. And yet they have enough personality to make

you feel that you're watching a "studio movie," But there is a naturalistic way in the approach.

Jon:

Were you using the Optimo Primes' IOP (Integrated or Internal Optical Palette, with internal optical element, interchangeable iris, rear filter, front filter)?

Checco Varese:

Yes. I have been using the same IOP, which I like a lot. It's the Glimmerglass 1/8 internal optical element. I have the whole set. But the 1/8 is the one I have been using.

Jon:

Do you use all the Optimo Prime focal lengths (18, 21, 24, 28, 32, 40, 50, 60, 75, 100, 135, 200 mm)?

Checco Varese:

I used them all. Unless there is a very specific shot, I usually tend not to go longer than the 100mm or 135mm. But yes, we used the whole set.

Jon:

I remember you and I talked about *The 33*, the mine collapse in Chile. You used zooms then. Why are you shooting with primes now?

Checco Varese:

The large format Optimo Primes are very nice. I did use Angénieux zooms on this show, *Under the Bridge*, as well. I used the whole family of Angénieux zooms. The reason for the large format Primes is that I like to use them wide open, at T1.8 or T2. The fall off of the focus is very nice, very cinematic. I hate to use the words organic and cinematic because everything is cinematic, but it's very evocative. With the large format zooms, obviously your maximum aperture is T2.9 for the Angénieux Ultra Compacts (21-56 mm and 37-102 mm) or T4.2 for the Ultra 12x (36-435 mm). But I've been using these primes and zooms with great success.

The Steadicam operators are happy with the Optimo Primes because they're small and light.

Jon:

And probably your focus pullers hate you because you're wide open?

Checco Varese:

They hate me anyway, so it is better to them a good reason :) No, most of the time, I am the bottom of barrel, the aperture barrel, wide open. But then if we go on a 75mm or 100mm, obviously we change it because the out of focus is too radical. One has to be careful when you have two people in a car and you have two profiles, you don't want to be wide open and racking focus constantly. So you may want to stop down a little bit. So,I'm very pleased and happy with this project. Riley Keough, the wonder actress whom I also worked with on *Daisy Jones & the Six* was one of the reasons and I wanted to work with her again. Also, Lily Gladstone, who was in *Killers of the Flower Moon*, played the police officer who investigates the case in *Under the Bridge*. She was amazing.

Jon:

Did you have a show LUT on your VENICE 2?

Checco Varese:

I've been lucky to work with Company 3 for 15 or 20 years on every project. I talk to Stefan Sonnenfeld, and the colorist to come up with a couple of LUTs. But as you know, I work with the DIT constantly, so I'm creating CDLs on every shot.

Yes, constantly. I'm proud to say that the director's cut, most of the time, other than a few shots, looks almost like the final product. And the final product is even better. Because it's not the show LUT, but the fact that the CDLs are applied in a dramatic way. You play the color and the darkness of a scene or the drama of the script or the drama of the scene. I'm happy when I see that the final product is very similar to the dailies. And that is an homage to my obsession with post.

Jon:

Were you there for grading?

Checco Varese:

Yes. We did a pre-grading, then we did a post pre-grading, and we did a post post grading. And then at the very end, our creator Quinn Shephard and showrunner Samir Mehta were fantastic. They went in and reapplied a little bit of grading. I wouldn't say reapplied, but they changed a few things that they liked better. But that's fine with me because it's their show. It's like I always see myself as a writer. Once you finish the script, it doesn't belong to me anymore. I write with shadows, so once I'm delivering my grading, that's that, it's not mine anymore.

Jon:

Were there particularly interesting things about your lighting on this show?

Checco Varese:

We had some very large night exteriors that are always challenging in the logistics of it, not in the aesthetics of it. But also we had wonderful sets designed by Jennifer Morton. She did an amazing job. I also had the great support of Hulu.

I've done three shows with them, and they always have been very generous. I had full freedom in terms of lighting equipment to support the camera language and the intent of the director and the showrunners. Quinn Shephard and Samir Mehta were constantly with us, supporting us.

Jon:

Did you work with local crew?

Checco Varese:

Everyone was from Vancouver. Vancouver is a wonderful city to work in.

Jon:

Where do you live, by the way?

Checco Varese:

Well, usually I live on American Airlines Flight 328, but other than that, home is Los Angeles.

Jon:

When you started *Under the Bridge*, did you test the Optimo Primes with different IOPs?

Checco Varese:

First of all, I tested four or five lenses from different manufacturers and ran the footage by the producer, the director, and everyone liked my choice. I didn't change the IOP. In Daisy Jones, we used the same Glimmerglass Internal Element, but we also used filters on the rear of the lenses. Certain scenes had the old Fogal stocking nets at the rear. Other scenes had Tiffen Black Promist 1/8 in the back. We played more in Daisy Jones. *Under the Bridge* is more naturalistic. I didn't want to use any gadgets or gimmicks because it takes you out of the story, in my opinion.

Jon:

That's a good point. You didn't use vintage lenses on Daisy Jones, which is a period piece about the LA music scene of the 1970s.

Checco Varese:

I have a theory. One audience member is as intelligent as one audience member. 100,000 audience members are really intelligent because you have to put all those instincts and all those feelings and all that intelligence together, so it's 100,000 intelligent people. I tend to try not to knock them on the head with anything. I try to be as naturalistic as I can, poetic and dramatic and funny and dark and bright and playful. But I try not to use a swing and tilt head when somebody's drunk and then do lens vignetting when it's a flashback.

There are some new set of lenses that are very affected by their characteristics. That's great if somebody wants to use them, but I'm not that kind of guy. Remember 10 years ago we were all starting to shoot anamorphic because we could?

Not because we wanted to, but just because we could. And then every movie, including a romantic comedy, had a horizontal blue streak. And a flashlight aiming into the lens. So I don't think I should use every trick in the book. If I use tricks, I don't even want Jon Fauer to realize what tricks I'm using. I want to trick even you. We have to make believe without pounding you on the head.

I always think that, as cinematographers, we're not the writers, but we're the commas and the dots and the exclamation points of what the writer gave. I don't want my episode or my movie with 27 exclamation points, I want one and where it needs to be. I'm not a big fan of these very affected lenses. Though I may contradict myself on my next project, and I'll do it with some lenses where I put Vaseline on the front and distress the look, then I'll tell you that I had a very good reason for that. But for now, I haven't done it. No, that's not me.

Jon:

I like your description of the Optimo Primes as champagne.

Checco Varese:

Playful, bubbly, they have a personality. With the VENICE 2,

they're fantastic. I'm sure they're fantastic with the ARRI too, but with the VENICE they're fantastic. Their out of focus quality, bokeh, or the depth of field is not that dramatic so that, all of a sudden you go, oh my God, what is happening back there? You still intuitively understand what's back there. They're super nice.

Jon:

And your assistants, who probably don't really hate you, can hold the Optimo Primes with one hand and just change the lens easily.

Checco Varese:

Yes. They are small and light.

Jon:

Tell us more about the FX3 and did you use G Master lenses?

Checco Varese:

No, I used the Sony ZEISS little, inexpensive E-mount lenses. With the Sony FX3 camera, you also have the ability to put an E-mount to PL Mount adapter in front and add a wireless video transmitter and a thing, and a thing, and another thing, and then it almost becomes a VENICE. But the beauty of those cameras is that you don't sacrifice quality. You sacrifice a few things: they don't have internal ND, so you need to put an ND outside. They don't record in RAW, you need to have an Atomos Ninja or something for external RAW recording. We had that. So you come out of HDMI and you go into the Ninja. But basically it's the similar color science. If you were to ask my DIT, he would tell you that the BTS-Rec-ISO-0.53-4 is different, but I don't know that, nor I care. It's a great camera, so you grab it. I have one on my cart or on the camera cart, and I say, "Okay, let's take a second, and let me do one shot." I grab that camera, I turn it on, and I run into the set and do one more take.

It gives you that ability to go, to grab it with one hand and do a shot that's almost like a crane move. Obviously it's a handheld crane move. The first time we used it was on Dopesick, a project I did for Hulu,.

I remember my DIT on that project, Daniele Colombera, said, "Hey, look, I have a box here. They just send me this prototype new camera called the FX3." I looked at it, and that night we were shooting a scene where a guy comes to a pharmacy, breaks a glass, runs, jumps over a counter, goes to the back of the pharmacy and steals some Oxycontin. And I said, "Daniele, I want to shoot that scene with that new FX3 camera." He goes, "Nobody has ever used it. Are you crazy?" I replied, "No, never. What's the worst that can happen? Nobody going to fire me for one shot and we're three days before wrapping and by the time they view the dailies, I'll be done."

So we shot with that FX3 camera, and I started telling everyone about that camera. And I've used it ever since. Even on a recent action movie, I had two of them. I was running with the camera, hiding to stay out of view of the other cameras and I was in the middle of the action like one of the background actors with the little FX3 camera.

# Unjoo Moon & Dion Beebe, ASC, ACS on *Original*

Above: Dion Beebe, ACS, ASC handheld with Sony BURANO on *Original*, a dance film directed by Unjoo Moon.
Photo: Gordon Dooley.

# Unjoo Moon & Dion Beebe, ASC, ACS on *Original*

Unjoo Moon is the writer and director of Original. Dion Beebe, ASC, ASC is the cinematographer. They happen to be partners.

Jon:

Is it difficult to work together as partners?

Unjoo:

We met at the Australian Film and Television School where we were both students. Dion always wanted to show me really good movies at the back of the library, and eventually, we got married.

It's the national film school in Australia, where probably most of the significant Australian filmmakers have come out of. We were there at a special time when the government put a lot of money into it and the students. The government is still really supportive of filmmakers in Australia and the film school is still an extraordinary film school. We had an incredible amount of resources and support from both the industry and the government when we were at film school, so much so in fact that when we were at film school, we actually got paid to go to there.

This is how full circle we've come, now we have a son who just started film school this semester. Axil Moon Beebe is at USC.

Jon:

Oh, that's not a bad place :)

Dion:

He definitely participated on this project, and we're very excited because he's coming into the family business. He started making films in high school. He would really set the bar high and he'd have these complicated days, and at the end of it, his only comment to us was, "Oh my god, that was so much fun. Why would anyone want to do anything else?" We thought, okay, he's got the bug.

Jon:

Let's jump in. How did this project begin?

Unjoo:

Tanya Lyon at Sony called and asked if Dion and I would like to work on something together. They were going to launch a camera, the BURANO, but they also wanted to give us quite a creative berth, quite a wide one, in terms of what we would conceive in doing to showcase the launch of a camera like this. They spoke to us about what the new BURANO was going to be like. Dion and I spoke, and he really understood the advantages of what he could do with a camera like this, in addition to shooting on the VENICE 2 as well. I think the overriding thing for me is that I wanted to make sure that whatever we created for them was going to cut through all the noise.

I knew that it was going to be primarily on the web and shown at trade shows, at different markets, at festivals. It was important that we created something that was eye-catching, and that if they were scrolling through the web, that they would get all the benefits of what we wanted to showcase with the camera very quickly.

As you know, Dion has shot a lot of musicals. And, actually, both my recent feature films have a lot of music in them. I have a background in dance and so we looked at doing something musically, but then as we were looking at it more, I wanted to lean into the diversity of what's going on in cinema right now, which is really exciting.

I can't believe that it's happening now, that it's taken so long for people to understand that you need the screen to look authentic—because that's what our lives are now. There are very many different kinds of people who make up our wonderful world. I had been looking at different songs, and I know Tushar Apte. He is an incredible composer. What the three ofus have in common is that we all grew up in Australia. Tushar recently had number one hits with K-pop bands like BTS and BLACKPINK. He's also written for many other wonderful artists. I knew that we wanted to try to do something musically with him that went into the K-pop world and could showcase dance—which we felt was a very good use of this camera.

And that sort of segues into an interesting conversation about why we bought Axil into the project, not because he was our son, but because we felt that the use of the BURANO camera and the music style is very much part of his generation. Dion was monitoring everything and he was operating the main VENICE camera. We also had a Technocrane operator and a Ronin operator, but we also thought that Axil, who has a fresh eye and what he watches on screen is so different to what we watch, so we felt that artistically he could bring something to the whole creative process. I thought it was also a good highlight that this camera is very much geared towards young filmmakers and the kind of projects they are shooting.

Jon:

Dion, why did you use the BURANO as well as VENICE 2?

Dion:

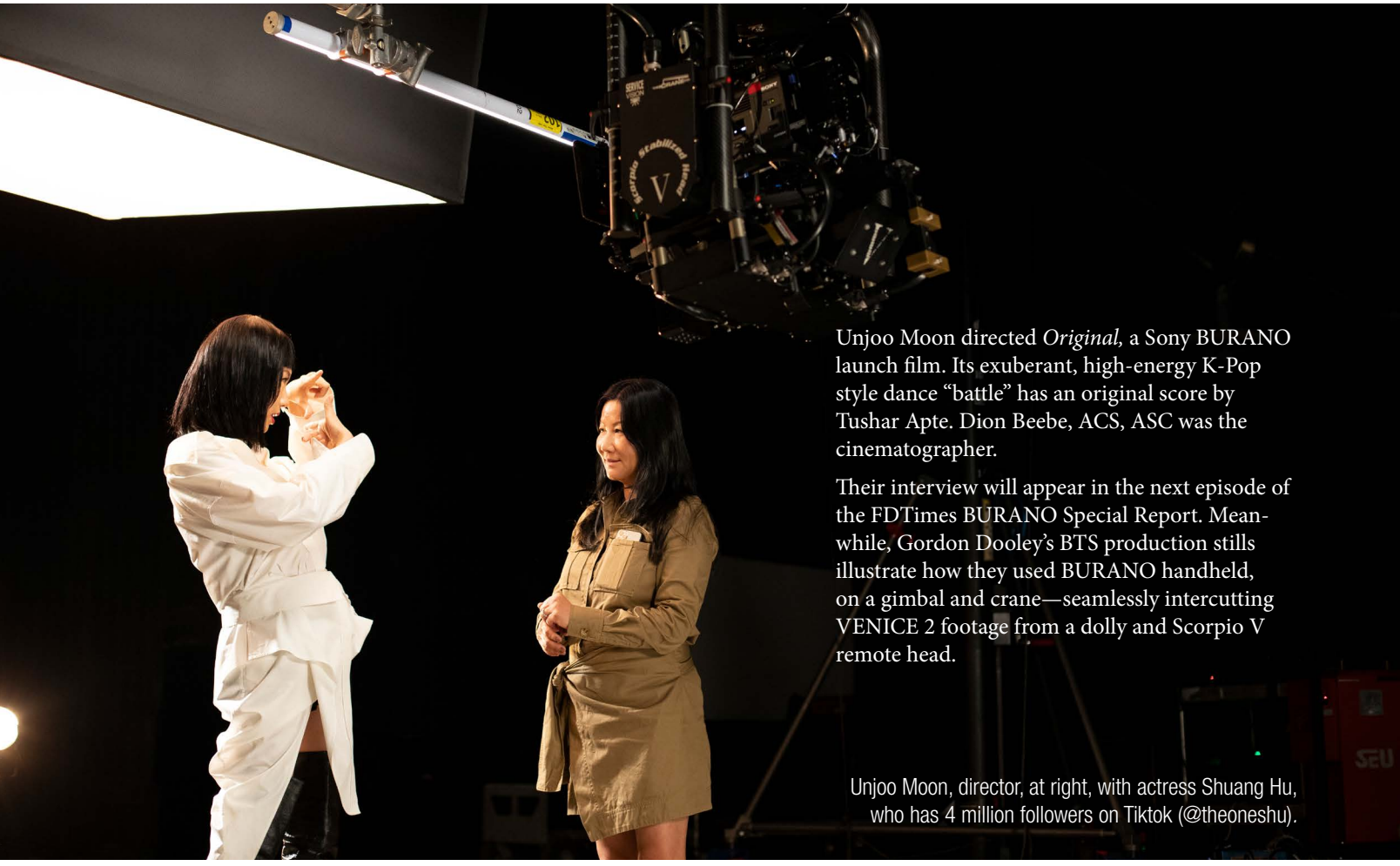
Part of my interest in showcasing the BURANO had to do with understanding its compatibility with the VENICE 2. Both are Full Frame, Large Format cameras. The BURANO is a smaller, more lightweight, with a slightly different type of capture than the VENICE 2. If I'm doing a movie and I'm shooting on, say a VENICE 2, then often you're supplementing with a lightweight camera, sometimes for Steadicam, rigs or stunt work. Part of the discovery for me was working with the two systems, and testing their compatibility in the sort of environment, which as Unjoo was describing, is a contemporary feel and look, a very strong use of color, strong highlights, a very pronounced style, so seeing how the two systems work together, how they cut together, how they worked in the DI, what their range was like, all those things were interesting to explore.

Jon:

And the cameras matched quite well.

Dion:

They did. I think the big test was in the DI when you've seen the piece and it's cut very fast between the two systems, one on the Ronin in a Steadicam type situation, the other one handheld, and then the VENICE 2 was mostly on the Technocrane. The two systems are intercut very quickly and randomly. In the DI, I found that I wasn't having to work differently with the material captured on the BURANO versus material captured on Sony's VENICE 2, so that was an important bit of the discovery for me.



Unjoo Moon directed *Original,* a Sony BURANO launch film. Its exuberant, high-energy K-Pop style dance "battle" has an original score by Tushar Apte. Dion Beebe, ACS, ASC was the cinematographer.

Their interview will appear in the next episode of the FDTimes BURANO Special Report. Meanwhile, Gordon Dooley's BTS production stills illustrate how they used BURANO handheld, on a gimbal and crane—seamlessly intercutting VENICE 2 footage from a dolly and Scorpio V remote head.

Unjoo Moon, director, at right, with actress Shuang Hu, who has 4 million followers on Tiktok (@theoneshu).

Dion Beebe, ACS, ASC handheld with BURANO filming dancer Grant Kaita.

Photos: Gordon Dooley.

Jon:

The editing was great. Beautifully cut.

Dion:

There was quite a bit of blowing up of some of the shots when Unjoo wanted to create fast action cuts on the same dance move.

Unjoo:

Because you needed it to feel very seamless in order for that style to work. The use of the two cameras was very seamless in the edit, but also the use of the two cameras helped us achieve the day and to shoot as much material as we did. We couldn't have done it all on just one larger camera.

Jon:

Were you shooting simultaneous, multi cameras?

Dion:

Yes. We were pretty much always shooting two cameras, with the VENICE and the BURANO running all the time. Sometimes we would just go in with two of the BURANOs and shoot closer, more handheld or Ronin footage.

Jon:

Oh, so you had two BURANOs and one VENICE 2. What aspect ratio were you framing?

Dion:

We were in 16:9, Full Frame.

We experimented with different lenses. The VENICE 2 has a full-height, 3:2 (35.9 x 24 mm sensor) Full Frame sensor. The BURANO has a 17:9 (35.9 x 24 mm) Full Frame sensor. So the lenses obviously are compatible, but the aspect ratios are different. So, we found that by settling on a 16:9 format, we were able to switch easily between the VENICE 2 sensor and the BURANO sensor, and also use a variety of lenses. I shot with the Chameleon Anamorphics, as well as spherical primes and zooms. We had quite a mixed bag of lenses in order to achieve different looks.

Jon:

And accessories?

Dion:

Wee had a wireless transmitter, Preston Light Ranger and so on. I tend to operate off a 7-inch SmallHD monitor mounted to the camera because it gives me the ability to have a full view, not just the image I'm capturing, but also the surround.

Jon:

I see you mounted the BURANO viewfinder/monitor on the camera right side, VENICE style, for the menus?

Dion:

Yeas. That kept the menu for the AC ad DIT.

Jon:

How did you work on developing the choreography and coverage?

Unjoo:

I had been searching for the right choreographers for this, and we've both worked with a lot of good choreographers. I came across these two women, Eileen and Diny, who had just set up their own dance studio in Koreatown, Los Angeles. The more I read about them and watched their videos, the more I liked the work that they were doing, which was slightly different. They are two sisters, and I just loved the energy that they had created around their studio. Within the story, I wanted to create a dance battle, so I just thought, how perfect to have two siblings. Instead of Kane and Abel, it's Diny and Eileen.

Dion:

From Koreatown.

Unjoo:

From Koreatown. I worked with them on the choreography. I went to rehearsals, and they came up with wonderful ideas, and then I would help them shape it for the camera and for the story. They preselected a group they knew were great dancers, and then I did the final casting to make sure that we had the right team.

Jon:

Where did you shoot ?

Unjoo:

Downtown LA. Ace*Mission Studios.

Dion:

It used to be an old brewing packaging company, but it's now studios and event spaces.

Unjoo:

We went for that space because we were looking for something industrial that would add to the feeling of a movie location, so I just didn't want to have an empty space. The space has great duct work that looks like you are really in an industrial space, and it ties to the exterior. I wanted to start outside on the street, because a lot of these K-pop dance videos are actually shot on the street. It's part of the style. K-pop dance crews are now an international sport, where people battle each other from across the globe in these videos. But I thought, wouldn't it be great to start as a K-pop dance battle video, and then suddenly take it into fantasy and go into the movie studio.

Jon:

Were the references to iconic dancers and dance moves always intended from the beginning?

Unjoo:

Yes. Because they're in a studio, and it's the fantasy of the dancers, once they start dancing, that's how they feel. They're the stars in the movie. And then I thought, we should be referencing iconic images of cinema, and almost creating a sort of what if? What if diversity was different back then? Maybe we would have had different images. Every actor who played those roles in the original films is totally iconic, and I can't imagine those films being any other way, but it's fun to question what if?

What if it had been a woman of color who had played the lead in *Cabaret*? What if it had been a woman of Asian heritage who had played the lead in *Pulp Fiction*? I think they're fun questions to ask.

## Unjoo Moon & Dion Beebe, ASC, ACS on *Original*

Axil Moon Beebe with BURANO handheld
Photos: Gordon Dooley

Jenna Beltran filmed handheld by Dion Beebe, ACS, ASC with BURANO, SmallHD Cine 7 as viewfinder and Preston LR2W.

Jon:

Were you shooting the dance numbers at 24 fps?

Dion:

We shot a combination of 24, 12, and also 48 fps. We did a couple of slow-motion passes, and also we utilized a 45-degree shutter. In order to capture the movement, make sure that it felt there was a sharpness and a precision to that sort of movement, we also made sure we captured that.

Jon:

Your focus puller did a great job.

Dion:

That's E.J. Mesisco.

Jon:

It was interesting that the BURANO was intended essentially for a single person shooting, but I think you showed that it's really good as a B or C, or even an A camera.

Dion:

Exactly. Unjoo and I were discussing ideas to showcase the camera, we said, "Let's push against what people think it can do or what it's designed to do, and try and push it into a different space," so that was part of the idea.

Jon:

You mentioned zoom lenses?

Dion:

We used lightweight Angénieux EZ Zooms for a lot of the handheld work. We were moving fast. Those Zooms are lightweight, and in combination with the BURANO, the package is pretty comfortable on your shoulder, which also is the result of the size of the camera. Sometimes the body of some of the new digital cameras is almost too small, because when you build it out, it's hard to balance. My team, of course, are very good at this. They built out the camera and balanced it, and of course, accessorized it, so that once you put it up on your shoulder, it felt pretty comfortable.

Unjoo:

Dion, you liked that it wasn't too small.

Dion:

Yes. I think you want a little bit of substance when you're holding a camera so that it doesn't bounce around all over the place like a DSLR.

Jon:

Was there a viewing LUT for Unjoo to watch on the big monitor?

Dion:

Sony has been generating a lot of good LUTs for their cameras. We took their base LUTs and then created our own with Picture Shop and senior colorist Michael Hatzer. Then, when I was on set, I worked with my DIT, Matt Love, to generate looks on set in consultation with Unjoo. We worked with those LUTs in the DI.

Jon:

Did you discuss how it should look during prep?

Dion:

We had a lot of reference material.

Unjoo:

Dion works like that all the time. He works with a lot of visual material and references. We talk through something, and then he would often go away and research it and say, "Is this what we're talking about?" We always had something to look at.

It's interesting, because in the end, when we had the final visual book of the project, I sent it to Tanya at Sony, and when we were shooting, she actually said to me, "The images look just like your visual reference book."

Jon:

What were some of those references?

Dion:

We looked at photography of iconic movie characters to draw into this idea that Unjoo had of the what if scenario of these characters being of more diverse backgrounds. K-Pop was a primary reference. As Unjoo developed the dance with the choreographers and as the dance battle idea developed, we would then take these ideas and combine them with the choreography, finding ways to express the choreography most effectively through these various scenarios and ideas.

Unjoo:

But also we knew that we had a limited amount oftime to shoot, and we had to get a lot of material to make the video work effectively with all the changing backgrounds, the intercuts. You need to constantly be getting a lot of footage, so I think that that's also what we talked through a lot. And then I'd worry about, "Well, what if we," and then Dion would say, "No, we can simplify it by doing it this way," and so it was like that

Dion:

We had a day to get it all done.

Jon:

It was a one-day shoot?

Unjoo:

Yeah.

Jon:

Wow. And one day pre-light?

Unjoo:

We had a pre-light and we brought the dancers in to rehearse, because they needed to know the space, as well, but they weren't performing. They weren't in wardrobe.

Dion:

Our approach was to make sure we stayed flexible in terms of what we were trying to... It needed to be a little bit of fun, as well.

Unjoo:

Yeah. But also I think that Dion choosing to put the cameras, like having the VENICE 2 on the Technocrane, the Ronin operator having a BURANO, and then having the handheld BURANO, as

Dion Beebe with BURANO handheld
Photos: Gordon Dooley

well, which Axil was shooting, and then sometimes Dion would pick that camera up, as well, depending on what we were doing, it actually made the whole day work a lot faster, because we could really move between scenarios fairly quickly, and we weren't waiting for setups on cameras. Sometimes we were shooting three cameras, but even when we were shooting single cameras, moving between the cameras was very seamless. That helped get that much material.

Jon:

What were the main lenses that you used?

Dion:

I was switching constantly, going from Anamorphics and then the Angénieux EZ Zoom pretty much sat on the handheld camera most of time.

Jon:

Why did you use so many different lenses—just for fun?

Dion:

I was interested in just putting the cameras through their paces a little bit, and also the looks that we discussed.

Unjoo:

Can I also say, it's because Dion and I are always battling about the size of the shot.

Jon:

I was going to ask you about that, since it's sort of a K-pop dance battle, was it also a director-DP battle?

Unjoo:

Oh, not at all, because we went to film school together, we have a long history of working together. In fact, it's probably the easiest relationship that we have.

Dion:

And I would always lose, so I gave up a long time ago :)

Unjoo:

But we have a very seamless way of working, and we can work really quickly together, particularly because we have the advantage of prepping a lot together. But when we are on set, the one thing that is kind of funny is that Dion likes the wide, cinematic shots, and I always like everything to be tight and close, so he was al-

ways having to switch lenses at the last minute.

Jon:

And you still probably wound up blowing it up in post, right, enlarging the image?

Unjoo:

No, not a lot. When I talk about reframing, a lot of it had to do with matching the choreography and matching the position of the dancers perfectly so that we could cut seamlessly between the dance moves.

Dion:

Because part of the concept was that the choreography remains the same, but we move through a number of different lighting situations and backings, and the color, that rotation of primary colors in the neon set piece, so that Unjoo could, when she got into the editing room, cut the same choreography against these different changing backgrounds.

Unjoo:

And no matter how well you set it up in the shoot, you still need to reframe it in post.

Dion:

Part of it was also not necessarily trying to match everything, because sometimes you're cutting on a move in to a move out.

Unjoo:

But when we did have to match, it worked. That was what we had to do.

Dion:

As you probably saw, it does create a lot of energy.

Jon:

Please describe the studio lighting.

Dion:

We pre-lit the stage, because we knew we were going to be moving through so many different scenarios throughout the course of the day. This was Unjoo's concept to be on a film set, effectively, so we embraced the idea of big lighting units and being against an old theatrical backdrop drop, and then placing the dancers against that setting. We had lights rigged here. We didn't employ any moving lights in this scenario. It was a more old-school sort of approach. The lights are running through cues, and you'll see as the dance progresses, we start to run cues on the big 20Ks and 9-lights that were in frame that start to come alive and pulse to the music.

Unjoo:

We wanted to make the casting feel very true to life now, but one of the advantages of making the casting authentic is that we really got to look at a whole range of skin tone, as well.

Jon:

And are you a dancer as well...

Unjoo:

I have a background in dance. I would have loved to have been a dancer. My parents were pretty upset when I became a filmmaker, so I cannot imagine what they would have done if I became a dancer. They're proud that we're in the film industry now, but they come from a different generation. My first jobs were working as a choreographer. I actually worked with the Olympic rhythmic gymnastics coach in Australia, so I'd had a lot of work with movement. But, at the same time, because I'm a storyteller, I understand that the dance also has to support and go through some kind of journey, so the audience feels like there's some kind of progression in that, as well. At the same time, I really needed some of their moments to really have different shapes, like make things larger than they had choreographed, so that you can really create a dynamic presence on the screen.

Jon:

Did you work at the same base ISOs on both cameras?

Dion:

We were switching between 800 and 3200 on both cameras.

Jon:

How many repetitions of the dance did you do in a day?

Dion:

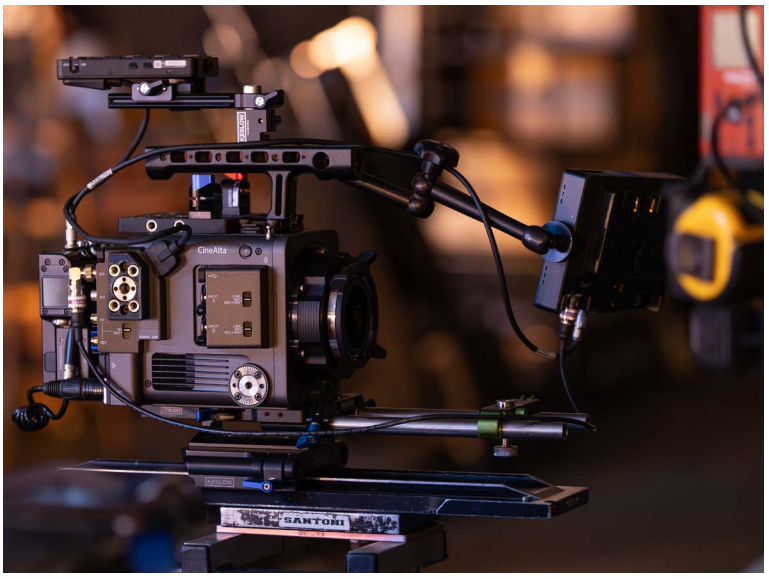
It was about 30-plus times.

Unjoo:

We had seven different backgrounds, and we ran the dance probably at least four or five times on each of those backgrounds, and then we went in and shot specific things in the dance, as well, so those dancers were incredible. They really were such troopers. A lot of the dancers knew each other, so that really helped.

Dion:

It helped that Unjoo understood what was required from the dancers. I've also worked with dancers a lot in the musicals I've done, so we were very aware of what the dancers had to go through the course of the day, and very much arranged our day towards letting them perform, giving them a little bit of time, letting them recover as we moved between sets, and they were phenomenal.



# Sony Cinema Line Cameras Mentioned in this Special Report: FX3, FX6, FX9

## FX3

| FX3 3.8K |
|---|
| Sensor: 12.1 MP actual / 10.2 MP effective |
| Sensor size: 35.6 x 23.8 mm - Full Frame |
| Steadishot: Image Stabilization of Sensor |
| No Internal ND |
| Phase Detect Auto Focus |
| Base/Enhanced ISO: 800 and 12,800 |
| Max Res: 3840 x 2160p XAVC S-I 4:2:2 10-Bit |
| Max Image Size : 16:9 |
| Variable framerate UHD: 1-120 fps |
| External RAW: 4264 x 2408 16-Bit HDMI |
| Alpha style E-mount — Full Frame & Super35 |
| Weight (body only): .640 kg / 22.6 oz |
| Size (body only): 129.7 mm / 5.1" wide<br>77.8 mm / 3.1" high<br>84.6 mm / 3.3" deep |
| Sony Z-Series 7.2V DC |
| Camera Introduced Feb 2021 |

## FX6

| FX6 4K |
|---|
| Sensor: 12.1 MP actual / 10.2 MP effective |
| Sensor size: 35.6 x 23.8 mm - Full Frame |
| No Steadishot |
| Internal Variable ND: Clear, ND.6 - ND2.1 |
| Phase Detect Auto Focus |
| Base/Enhanced ISO: 800 and 12,800 |
| Max Res: 4096 x 2160p XAVC-I 4:2:2 10-Bit |
| Max Image Size: 16:9 |
| Variable framerate 4K: 1-60 / UHD: 1-60 fps |
| External RAW: 4096 x 2160 16-Bit SDI |
| Alpha style E-mount — Full Frame & S35 |
| Weight (body only): .885 kg / 1 lb 15.4 oz |
| Size (body only): 110 mm / 4.33" wide<br>115 mm / 4.5" high<br>140 mm / 5.5" deep |
| Battery: Sony BP-U Series 14.4V DC |
| Camera Introduced November 2020 |

## FX9

| FX9 4K |
|---|
| Sensor: 20.5 MP actual / 19 MP effective |
| Sensor size: 35.6 x 23.8 mm - Full Frame |
| No Steadishot |
| Internal Variable ND: Clear, ND.6 - ND2.1 |
| Phase Detect Auto Focus |
| Dual base ISO: 800 and 4000 |
| Max Res: 4096 x 2160p XAVC-I 4:2:2 10-bit |
| Max Image Size: 16:9 |
| Variable framerate 4K: 1-60 / UHD: 1-120 fps |
| External RAW: 4096 x 2160 16-Bit SDI |
| Lever Lock E-mount — Full Frame & S35 |
| Weight (body only): 2.0 kg / 4.4 lb |
| Size (body only): 146 mm / 5.75" wide<br>142.5 mm / 5.61" high<br>229 mm / 9.02" deep |
| Battery: Sony BP-U Series 14.4V DC |
| Camera Introduced September 2019 |

The Sony Cinema Line also includes the FX30, an APS-C 20 MP Super35 (23.3 x 15.5 mm) variant of the FX3, and the FR7, a 10.3 MP Full Frame PTZ camera.

# Sony VENICE (aka VENICE 1), VENICE 2, BURANO

## VENICE



| VENICE 6K |
|---|
| Sensor: 24 MP |
| Sensor size: 35.9 x 24 mm - Full Frame |
| No Steadishot |
| Internal ND: Clear, ND.3 - ND2.4 |
| No AF |
| Dual base ISO: 500 and 2500 |
| Max Res: 6048 x 4032 X-OCN 16-Bit |
| Max Image Size: 3:2 (full sensor height) |
| Variable framerate 6K 3:2 FF 1-60 fps |
| External X-OCN: 6048 x 4032 16-Bit |
| PL Mount & Lever Lock E-mount—FF & S35 |
| Weight (body+PL): 3.9 kg / 8 lb 10 oz |
| Size (body only): 147 mm / 5.875” wide<br>158 mm / 6.25”” high<br>235 mm / 9.375” long |
| Battery: 14.8v V-Mount rear plate |
| Camera Introduced September 2017 |
| Requires add-on AXS-R7 for X-OCN recording |

## VENICE 2



| VENICE 2 8.6K |
|---|
| Sensor: 50 MP |
| Sensor size: 35.9 x 24 mm - Full Frame |
| No Steadishot |
| Internal ND: Clear, ND.3 - ND2.4 |
| No AF |
| Dual base ISO: 800 and 3200 |
| Max Res: 8640 x 5760 X-OCN 16-Bit |
| Max Image Size: 3:2 (full sensor height) |
| Variable framerate 8K 3:2 FF 1-30 fps |
| Internal X-OCN XT/ST/LT: 8640 x 5760 16-Bit |
| PL Mount & Lever Lock E-mount—FF & S35 |
| Weight (body+PL): 4.3 kg / 9 lb 7.7 oz |
| Size (body only): 152 mm / 5.98” wide<br>158 mm / 6.25” high<br>250 mm / 9.84” long |
| Battery: 14.8v V-Mount rear plate |
| Camera Introduced November 2021 |

## BURANO

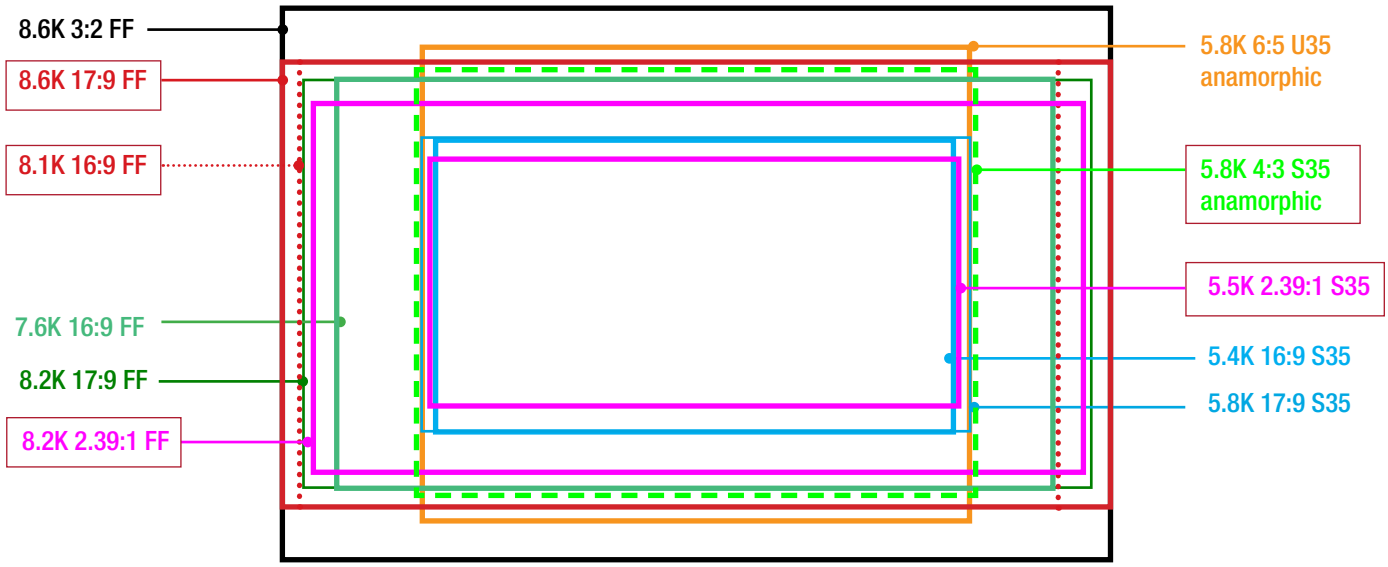


| BURANO 8.6K |
|---|
| Sensor: 57 MP |
| Sensor size: 35.9 x 24 mm - Full Frame |
| Steadishot: Image Stabilization of Sensor |
| Internal Variable ND: Clear, ND.6 - ND2.1 |
| Phase Detect Auto Focus |
| Dual base ISO: 800 and 3200 |
| Max Res: 8632 x 4856 X-OCN 16-Bit |
| Max Image Size: 16:9 |
| Variable framerate 8K 17:9 1-30 fps |
| Internal X-OCN LT: 8632 x 4856 16-Bit |
| PL Mount & Lever Lock E-mount—FF & S35 |
| Weight (body+PL): 2.9 kg / 6.39 lb |
| Size (body only): 146 mm / 5.75” wide<br>143 mm / 5.625” high<br>218 mm / 8.58” long |
| Battery: 14.8v V-Mount rear plate |
| Camera Introduced September 2023 |

*Note: Some of these specifications are from FDTimes research, math or estimates — and are not official Sony details.*

# VENICE 2 V2.00 Imager Modes, Aspect Ratios, Formats, Resolution, etc.

*Full Frame* *Ultra 35 & Super35*




Red Rows indicate new Imager Modes introduced in V2.00 update

| Imager Mode | Format [2] | Resolution | W x H (mm) | Project Frame Rate [3] | fps [4] | License [5] |
|---|---|---|---|---|---|---|
| 5.4K 16:9 | S35 | 5434 x 3056 | 22.6 x 12.7 | 23, 24, 25, 29, 47, 50, 59 | 1-60, 66, 72, 75, 88, 90 | - |
| 5.5K 2.39:1 | S35 | 5480x2296 | 22.8 x 9.55 | 23, 24, 25, 29, 47, 50, 59 | 1-60, 66, 72, 75, 88, 90, 96, 100, 110, 120 | - |
| 5.8K 17:9 | S35 | 5792 x 3056 | 24.1 x 12.7 | 23, 24, 25, 29, 47, 50, 59 | 1-60, 66, 72, 75, 88, 90 | - |
| 5.8K 6:5 | U35 | 5792 x 4854 | 24.1 x 20.2 | 23, 24, 25, 29, 47 | 1-48 | Anamorphic |
| 5.8K 4:3 | S35 | 5792 x 4276 | 24.1 x 17.8 | 23, 24, 25, 29, 47, 50, 59 | 1-60 | Anamorphic |
| 7.6K 16:9 | FF | 7680 x 4320 | 32.0 x 18.0 | 23, 24, 25, 29, 47, 50, 59 | 1-60 | Full Frame |
| 8.1K 16:9 | FF | 8100x4556 | 33.8 x 19.0 | 23, 24, 25, 29 | 1-48 | Full Frame |
| 8.2K 17:9 | FF | 8192 x 4320 | 34.1 x 18.0 | 23, 24, 25, 29, 47, 50, 59 | 1-60 | Full Frame |
| 8.2K 2.39:1 | FF | 8192x3432 | 34.1 x 14.3 | 23, 24, 25, 29, 47, 50, 59 | 1-60, 66, 72 | Full Frame |
| 8.6K 17:9 | FF | 8640x4556 | 35.9 x 19.0 | 23, 24, 25, 29, 47 | 1-48 | Full Frame |
| 8.6K 3:2 | FF | 8640 x 5760 | 35.9 x 24.0 | 23, 24, 25, 29 | 1-30 | Full Frame |

If an imager mode is not shown in the chart above, you can still choose any aspect ratio you desire with user-defined frame lines.
Then, simply pick the closest sensor mode that fits, and crop the remainder in post.

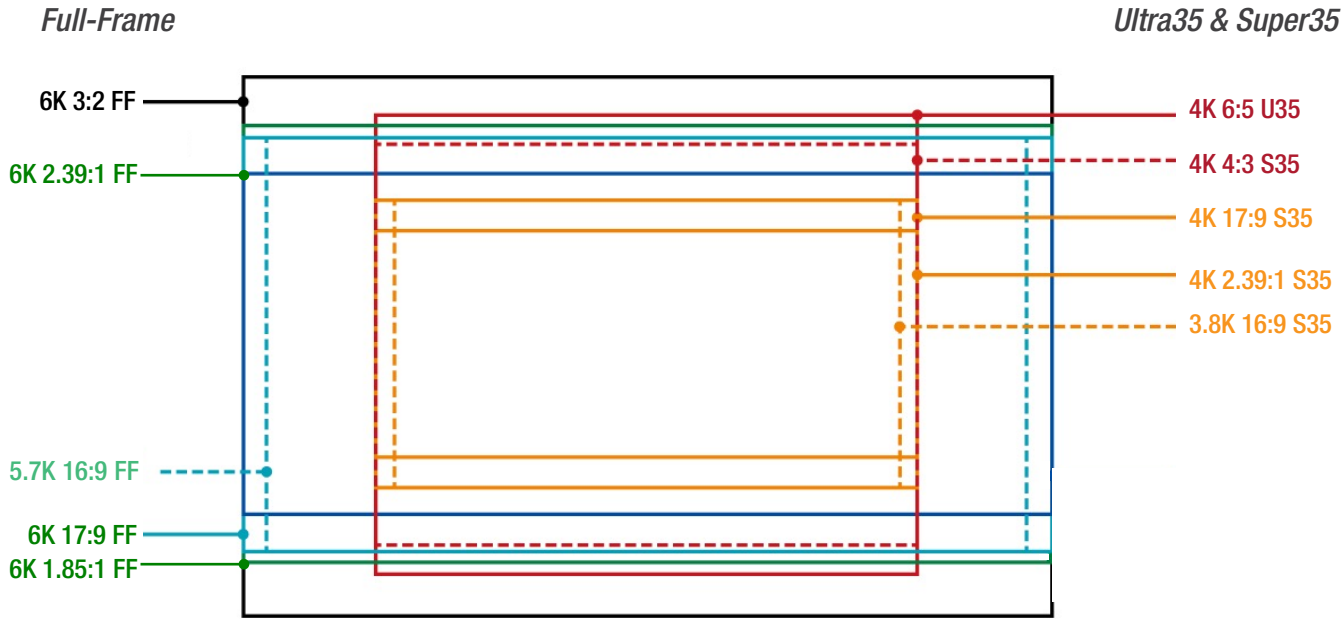
2: FF=Full Frame. S35 = Super35. U35 is Angénieux's good designation of formats larger than Super35, with image heights greater than 18 mm and usually around 20 mm. It can also be called S35+ but neither designation is official to Sony.

3: For simplicity, Project Frame Rate numbers are abbreviated. 23=23.98; 24=24; 25=25; 29=29.97; 47=47.95; 50=50; 59=59.94

4: These frames rates are for standard base ISO 800.
In high base ISO 3200, 1-7 fps is not available.

5: You only need the Anamorphic License if you want to desqueeze the image on the EVF or monitors. If you are shooting with spherical lenses and would like this sensor mode, then you can select it without a license.

# Original VENICE, v6.0 (same as VENICE 2 6K Imager Modes)




| Imager Mode [6] | Format [7] | Resolution | W x H (mm) | Project Frame Rate [8] | fps | License [9] |
|---|---|---|---|---|---|---|
| 3.8K 16:9 | S35 | 3840 x 2160 | 22.8 x 12.8 | 23, 24, 25, 29, 47, 50, 59 | 1-60, 66, 72, 75, 88, 90, 96, 100, 110 | - |
| 3.8K 16:9 Surround View | S35 | 3840 x 2160 | 22.8 x 12.8 | 23, 24, 25, 29, 47 | 1-48 | - |
| 4K 2.39:1 | S35 | 4096 x 1716 | 24.3 x 10.3 | 23, 24, 25, 29, 47, 50, 59 | 1-60, 66, 72, 75, 88, 90, 96, 100, 110, 120 | - |
| 4K 17:9 | S35 | 4096 x 2160 | 24.3 x 12.8 | 23, 24, 25, 29, 47, 50, 59 | 1-60, 66, 72, 75, 88, 90, 96, 100, 110 | - |
| 4K 17:9 Surround View | S35 | 4096 x 2160 | 24.3 x 12.8 | 23, 24, 25, 29, 47 | 1-48 | - |
| 4K 4:3 | S35 | 4096 x 3024 | 24.3 x 18.0 | 23, 24, 25, 29, 47, 50, 59 | 1-48, 49-60, 66, 72, 75 | Anamorphic |
| 4K 4:3 Surround View | S35 | 4096 x 3024 | 24.3 x 18.0 | 23, 24, 25, 29, 47 | 1-30 | Anamorphic |
| 4K 6:5 | U35 | 4096 x 3432 | 24.3 x 20.4 | 23, 24, 25, 29, 47 | 1-30, 31-60, 66, 72 | Anamorphic |
| 5.7K 16:9 | FF | 5674 x 3192 | 33.7 x 19.0 | 23, 24, 25, 29, 47 | 1-30, 31-60, 66, 72 | Full Frame |
| 6K 2.39:1 | FF | 6048 x 2534 | 35.9 x 15.0 | 23, 24, 25, 29, 47, 50, 59 | 1-60, 66, 72, 75, 88, 90 | Full Frame |
| 6K 17:9 | FF | 6054 x 3192 | 36.0 x 19.0 | 23, 24, 25, 29, 47, 50, 59 | 1-60, 66, 72 | Full Frame |
| 6K 1.85:1 | FF | 6054 x 3272 | 36.0 x 19.4 | 23, 24, 25, 29, 47, 50, 59 | 1-60, 66, 72 | Full Frame |
| 6K 3:2 | FF | 6048 x 4032 | 35.9 x 24.0 | 23, 24, 25, 29, 47, 50, 59 | 1-60 | Full Frame |

6: These details are mostly the same as for the original VENICE, firmware v6.0.

7: U35 is Angenieux's good designation of formats larger than Super35, usually with an image height of around 20 mm. FF=Full Frame

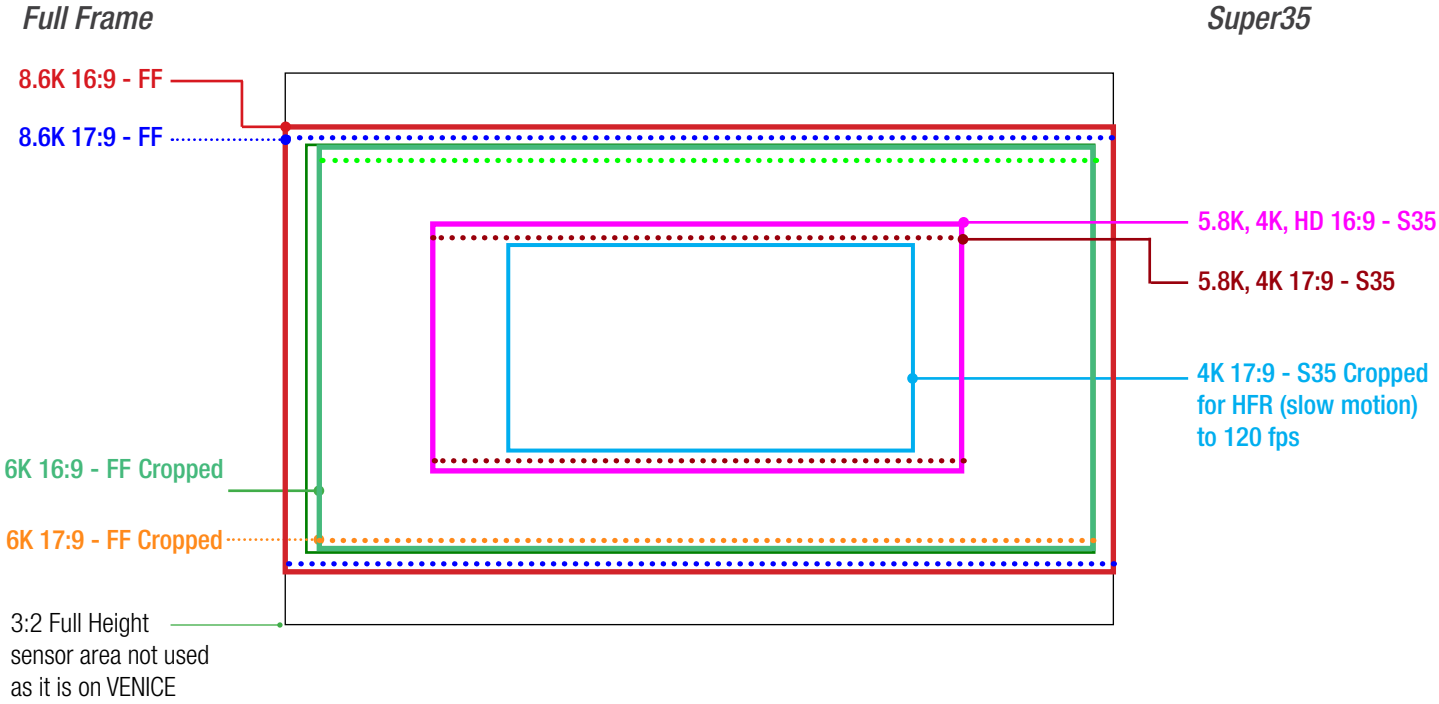
8: For simplicity, Project Frame Rate numbers are abbreviated. 23=23.98; 24=24; 25=25; 29=29.97; 47=47.95; 50=50; 59=59.94

9: You only need the Anamorphic License if you want to desqueeze the image on the EVF or monitors.
If you are shooting with spherical lenses and would like this sensor mode, then you can select it without a license.

FDTimes has consolidated and modified these table from several Sony charts.

Specifications may change.

# BURANO Imager Modes, Aspect Ratios, Formats, Resolution, etc.




| Imager Mode | Format [6] | Resolution | W x H (mm) | Project Frame Rate | fps |
|---|---|---|---|---|---|
| 8.6K 16:9 | Full Frame | 8632 x 4856 | 35.9 x 20.2 | 23.98, 25, 29.97 | 1-30 |
| 8.6K 17:9 | Full Frame | 8632 x 4552 | 35.9 x1 8.9 | 23.98, 24, 25, 29.97 | 1-30 |
| 6K 16:9 | Full Frame cropped | 6052 x 3404 | 33.6 x 18.9 | 23.98, 25, 29.97, 50, 59.94 | 1-60 |
| 6K 17:9 | Full Frame cropped | 6052 x 3192 | 33.6 x 17.7 | 23.98, 24, 25, 29.97, 50, 59.94 | 1-60 |
| 5.8K 16:9 | Super35 | 5760 x 3240 | 24.0 x 13.5 | 23.98, 25, 29.97, 50, 59.94 | 1-60 |
| S35 5.8K 17:9 | Super35 | 5760 x 3036 | 24.0 x 12.6 | 23.98, 24, 25, 29.97, 50, 59.94 | 1-60 |
| 4K 17:9 | Super35 cropped | 4096 x 2160 | 17.0 x 9.0 [7] | 23.98, 24, 25, 29.97, 50, 59.94 | 1-60, 100, 120 |

If an imager mode is not shown in the chart above, you can still choose any aspect ratio you desire with user-defined frame lines. Then, simply pick the closest sensor mode that fits, and crop the remainder in post.

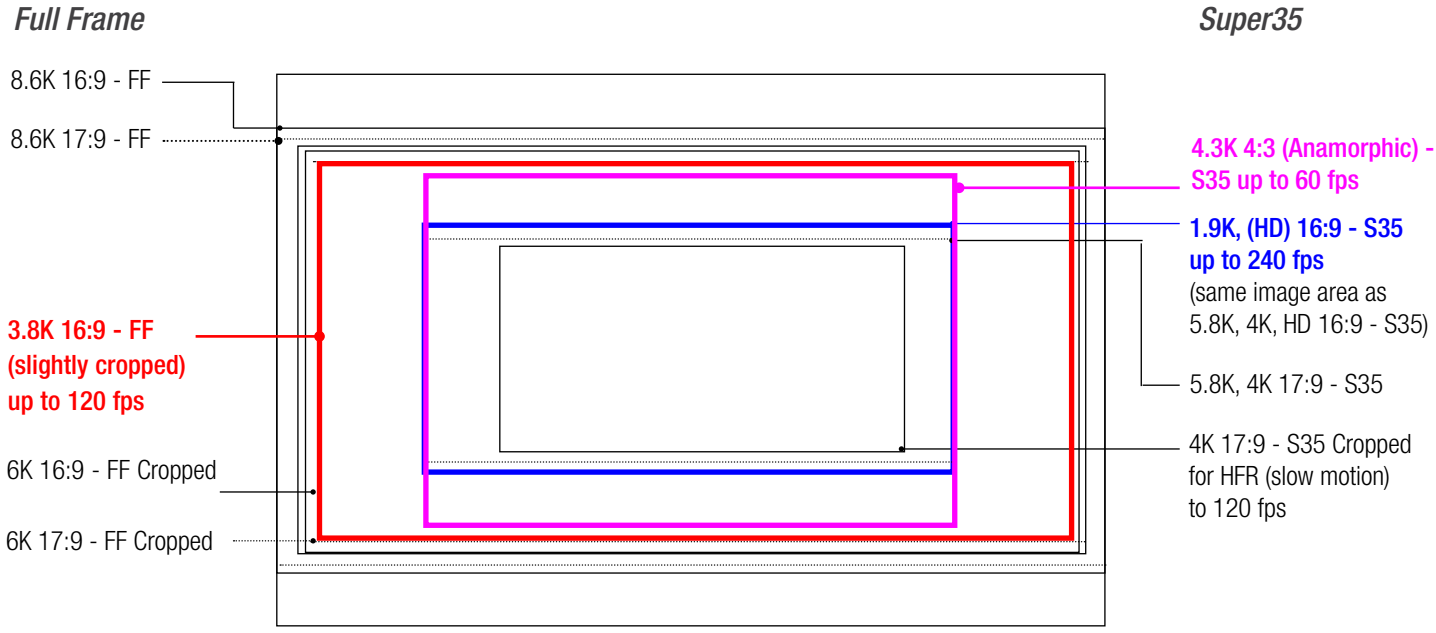
6: FF=Full Frame. S35 = Super35.

7: Super35 cropped is slightly larger than Super16 film format, which is 12.52mm wide x 7.41mm high.

In case anyone is wondering whether there will be more options, Nobu Takahashi said, in his interview, "After the release, we would like to get feedback from users so our software developers can plan future version updates and make this camera even better. These days, it's not just about releasing the product. It is also listening to the customers in order to polish the tools so that they will be able to do more artistic filmmaking."

*And here they come...see next page.*

# Sony BURANO Version 1.1 and 2.0 Firmware Updates




| New V2.0 Imager Mode | Format | Approx Resolution | W x H (mm) | maximum frame rate |
|---|---|---|---|---|
| 3.8K 16:9 | Full Frame slightly cropped | 3840 x 2156 | 32 x 18 mm | up to 120 fps |
| 4.3K 4:3 | Super35 (Anamorphic) | 4320 x 3248 | 24.0 x 18 mm | up to 60 fps |
| 1.9K (HD) 16:9 | Super35 | 1920 x 1080 | 24.0 x 13.5 mm | up to 240 fps |

May 29, 2024. Two firmware updates for BURANO cameras are announced by Sony in response to user requests.

BURANO Version 1.1 and 2.0, are planned to be released over the next year and will include additional recording formats, additional anamorphic desqueeze options and monitoring updates.

## BURANO Firmware Version 1.1

Planned for release by the end of June 2024, BURANO firmware Version 1.1 adds 1.5x anamorphic desqueeze. It also includes new functions for live event production and S700 Protocol over Ethernet (TCP/IP) for remote control of a BURANO using an RCP (remote control panel). Controllable settings include exposure, white balance, paint, etc (depending on the RCP model.) Version 1.1 also supports for Multi Matrix Area Indication. This lets users adjust targeted colors during Multi Matrix operation.

BURANO Firmware Version 1.1 also supports Sony's Monitor & Control app version 2.0.0 which includes Multi-Camera Monitoring for iPadOS (feeds from 1 to 4 cameras), precise exposure monitoring (waveform and false color), intuitive focus control, etc. Sony's Monitor & Control app is free and available for iOS and Android devices.

## BURANO Firmware Version 2.0

Planned for release in March 2025 or later, BURANO firmware Version 2.0 includes new recording formats, 1.8x anamorphic desqueeze, monitoring improvements, and high frame rate (S & Q) — including 66, 72, 75, 88, 90, 96 and 110 fps.

New recording formats will add a 3.8K Full Frame Cropped Imager Mode for recording up to 120 fps.

**New Imager Modes:**

| | | |
|---|---|---|
| Full Frame | 3.8K 16:9 slightly cropped | Up to 120 fps |
| Super 35 | 4.3K 4:3 (Anamorphic) | Up to 60 fps |
| Super35 | 1.9K 16:9 | Up to 240 fps |

Also, 24.00 fps will be added to X-OCN 16:9 imager modes (previously, you had 23.98, but not 24 fps).

Version 2.0 also has monitoring improvements, including standardized SDI video output for monitoring across X-OCN and XAVC and an improved on-screen display output that places camera status information outside of the image. It will also include Viewfinder Gamma Display Assist for monitoring while shooting in S-Log.

More exposure tools will be added, including High/Low Key derived from the VENICE camera system. White balance memory presets will be expanded from 3 to 8. Active/High Image Stabilization will be supported in Full-Frame 6K and Super 35 1.9K 16:9 Imager Modes. Version 2.0 will also add lens focus breathing compensation (for various E-mount lenses) and image stabilization metadata in X-OCN.

BURANO Firmware Version 1.1 and Version 2.0 can be downloaded, when ready, directly to the camera using a PC.

*These preliminary specifications may change.*


Sony Cine Camera Report by Jon Fauer
Film and Digital Times

fdtimes.com

Axil Moon Beebe handheld with BURANO.