

Jon Fauer, ASC

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FILM DIGITAL TIMES

Art, Technique, and Technology in Motion Picture Production Worldwide

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Daniel & Kruschewski, Leica

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Dennis McDonald, Keslow Camera

FitzMaurice & VariCam 35 on "Monolith"

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Report from the Kingdom of Digital

Jason Garcia's Guide to Surviving Episodic Focus

Starry Nights, No Light Moonlight, Low Light

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A Minimalistic Sony Camera

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ARRI Lighting Factory Tour

STEADICAM Factory Tour

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Sony a7RII

DaVinci for DPs

Desqueezing a7RII Anamorphic

Art, Technique and Technology

Film and Digital Times is the guide to technique and technology, tools and how-tos for Cinematographers, Photographers, Directors, Producers, Studio Executives, Camera Assistants, Camera Operators, Grips, Gaffers, Crews, Rental Houses, and Manufacturers.

It's written, edited, and published by Jon Fauer, ASC, an award-winning Cinematographer and Director. He is the author of 14 bestselling books—over 120,000 in print—famous for their user-friendly way of explaining things. With inside-the-industry “secrets-of-the-pros” information, *Film and Digital Times* is delivered to you by subscription or invitation, online or on paper. We don't take ads and are supported by readers and sponsors.

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Lighting with Paint on a Starry Night



Cover:

The Starry Night

Vincent van Gogh

Saint Rémy, June 1889

oil on canvas

73 × 92 cm (28.7 × 36.2 in)

Museum of Modern Art

photo by Howard Preston

Dear Theo,

This morning I saw the country from my window a long time before sunrise, with nothing but the morning star, which looked very big. I now have...a new study of a starry sky. I've worked...in white lead impasto, which brings a firmness to the land.

Vincent van Gogh wrote letters about "The Starry Night" to his brother Theo in June 1889. The messy business with his ear had occurred late the year before. However, historians Hans Kaufmann and Rita Wildegans argue ("Van Gogh's Ear: Paul Gauguin and the Pact of Silence") that Gauguin was the one who had lopped it off with a sword during an argument.

In another fit of revisionist history, we might imagine the following letter, presumably found by the heirs of van Gogh's Gaffer, about the "making of" a massive production they worked on together in and around Saint Rémy.

Dear Theo,

The script slugline says EXT. VILLAGE - STARRY NIGHT. The producer says there's no room in the budget for the lights I am requesting. I didn't think I was asking too much: only twelve Airstar 4K Spheres and a hundred 20K Airstar Tubes. Do you think that is excessive?

Look at my location lighting plan in the painting, above. You can see the twelve Airstar Balloons. The art director thought they were stars. Obviously he doesn't know much about cinema lighting. "How can stars have such big halos?" I asked him.

He blamed it on lead poisoning. "Vincent, those halos around point sources come from all the years you spent mixing lead pigments with your bare hands."

Maybe he's right. I do see halos around specular highlights and point sources. It sort of looks like a Tiffen Promist 4.

Anyway, back to our village night scene. As you know, Airstar Lighting Balloons are filled with helium, have lights inside, and are controlled with tethers by technicians on the ground. For the stars, I'll put 5K Tungsten lights in the balloons, along with some with 1K Sodium Vapor bulbs to get weird colors.

The background sky above the hills is going to be a bit of a challenge. We'll fly the hundred 20K Airstar Tubes along the ridge. Each Airstar is 29.5 feet long and 12 feet high, and each will carry five 4K HMI lights inside. I figure this kind of "available lighting" will require every available lighting technician in France, assisted by 500 shepherds who know the area, and the entire student population of La Fémis and Louis Lumière film schools.

Oh, and then there's the question of how to blend these large background balloons into one continuous band of white-ish glow, as you can see in my painting. I'm considering two options. We could release a massive flock of white doves into the air to blend the light. Or we might ask the shepherds to build smoky campfires along the ridge, thus diffusing the glow of my hundred balloons into a single band.

But, *hélas*, it seems the only thing left in the producer's budget is profit. He seems unwilling to call the rental house with my lighting list. Instead, he told me of several new high ISO Full Frame cameras that can shoot in moonlight, in starry nights, and even no light. I'm going to test them. Someone joked they can even turn night into a noisy day when cranked up too far. We'll see.

My assistant and I are going to test a new Canon camera that goes up to 4 Million ISO. The new Sony a7R Mark II goes to 25,600 ISO. Sony's a7S soars to 409,600. The Leica Q climbs to 50,000. It will be interesting to capture churning skies and halated stars and things that the eye cannot normally see.

Best regards to all our friends at IBC. Yours, Vincent.

Painting with Light on a Moonless Night



Below: Manhattan Skyline from Brooklyn. Canon ME20F-SH
ISO 36,200. 35 mm EF USM f/1.4.
Framegrabs courtesy of Canon USA.

Above: *Starry Night Over the Rhone*. Vincent van Gogh.
Arles, September 1888. Oil on Canvas.
72.5 cm × 92 cm (28.5 in × 36.2 in). Musée d'Orsay, Paris



New Mini Sony FS5



There are a bunch of breakthrough technologies and good ideas in the new mini Sony PXW-FS5 4K camera.

1. Variable ND: Internal, 7 stops, CONTINUOUSLY VARIABLE! The ND control knob is continuously variable from clear to ND2.1 (7 stops). Or, with the flick of a switch, you can choose one of four presets.

That means the FS5 can do iris shifts with an auto-iris lens while maintaining constant exposure. For example, you're focused on a flower in the foreground. Turn the continuously variable ND Filter Knob, and your iris will shift, for example, from T2.0 to T22 (7 stops) to nicely bring the background into focus.

2. The Sony FS5 has Autofocus with face detection: new algorithms provide very responsive and rapid focus that can lock and track faces, selectable with joystick control.

3. The FS5 resembles the FS7, but it is half the size and weight. It is the baby sister. This comes as no surprise, since the body was designed by Naofumi Yoneda, the same guy who also styled the FS7. The new camera is modular and has a great handgrip. The ergonomic design of the FS5 screams "handheld." This is a mini, ultra-light, cinema verité hand-held or shoulder-resting camera. It reminds me of a digital homage to the Aaton a-minima.

Product Manager Juan Martinez said, "During the design phase, it was clear that a DSLR shape was not ideal. We took the design

team to AbelCine and looked at cameras. We especially liked Jeff Kreines' Kinetta and Jean-Pierre Beauviala's brilliant Aaton hand-held cameras. We especially liked the a-minima for its size and ergonomics. I truly admire Jean-Pierre Beauviala for everything he's invented and created for cinema."

The official name is Sony PXW-FS5, with an "X" as in XDCAM family—not branded CineAlta like the F5, F55, F65.

FS5 has the same Super35 size CMOS sensor (APS-C 16:9 format) as the FS7. FS5 FS RAW data comes directly out of the single BNC in back of the camera body. It is a Sony proprietary 12-bit RAW signal, lossless, slightly compressed, that will be available as a paid upgrade later on. (On the FS7, there is a 144-pin connector to which the XDCA-FS7 I/O and Codec Extension Unit docks to receive 12-bit FS RAW data. On the FS700, 12-bit RAW comes out of BNC connector.) All these cameras record RAW onto compatible third party recorders.

The camera has 14 stops of dynamic range. Suggested ISO is 2000, and it might go up to 32,000. It records 8-bit 4:2:0 UHD up to 30 fps in 16:9 aspect ratio XAVC-L codec to internal SD cards. Top speed is 240 fps in Full HD, external UHD recording to 60 fps, and a few other variants. Total number of pixels is 11.6 Million — 4352 x 2662. Effective pixels: 8.4 Million (4096 x 2160).

Sony paid particular attention to ergonomics and modular design. Almost everything attaches without tools. The top handle can be

Leica Q: Code Name Hemingway



When this new Leica camera was a work-in-progress, the code name was “Hemingway.” How on earth could a camera be code-named after a man Alfred Eisenstaedt called “the most difficult man I ever photographed?”

Eisenstaedt (who photographed the iconic *V-J Day in Times Square* with a Leica, visited Hemingway in Cuba to shoot a LIFE Magazine cover in 1952. Eisenstaedt recalled, “That afternoon the Royal Yacht Club gave a cocktail party, and he came over, blue in his face from drinking and said, ‘Alfred, you came too close to my boat. I shot at you.’ With Hemingway, you had to think first before you answered. I’d forgotten that, and I said, ‘Papa, I don’t believe you.’

“You know what he did? Dropped his glass. Foam came to his mouth. He grabbed me by the lapels and bent me backwards. My cameras flew all over. He said, ‘Never say you don’t believe Papa.’”

Hemingway recalls the same LIFE cover photo shoot in a letter (June 21, 1952) to Harvey Breit, critic for the *New York Times*. “This will be a dull letter because I got too much sun on my head

sitting on my ass on a rock while Eisenstaedt from LIFE took colour shots for a cover for them...It is June and 92 in the shade and I was sitting bareheaded for 2 or 3 hours. It knocked the hell out of my head. The last day Eisenstaedt nearly got a sun stroke himself when he forgot his cap.”

This will hopefully not be a dull article about the new Leica.

Hemingway wrote, “Never confuse movement with action.” Andreas Kaufmann, Chairman of Leica, said, “Change two words and you get Leica’s philosophy: never confuse snapshots with pictures.”

Hemingway: “My aim is to put down on paper what I see and what I feel in the best and simplest way.”

Kaufmann: “Replace ‘paper’ with ‘photographs’ and you get the essentials of Leica.”

Hemingway: “Writing and travel broaden your ass if not your mind and I like to write standing up.”

Kaufmann: “I like to shoot standing up and our new Leica camera definitely broadens your mind.”



Hemingway on his boat Pilar, with fishing guide Carlos Gutierrez.
Photo by Alfred Eisenstaedt.
Courtesy of Christian Skrein Photo Collection.

ARRI Lighting - Stephanskirchen



Stephanskirchen is a small town halfway between Munich and Salzburg. It's next to Rosenheim, where the River Inn runs through it, gateway to Innsbruck, the Brenner Pass, and the splendors of Trentino-Alto Adige. ARRI purchased land here in 1950 and set up a foundry for injection molding of aluminum camera bodies. Camera bodies are now CNC milled in Munich. So the factory had room to expand. This is where ARRI HMI, Tungsten, and LED fixtures are designed and built. The brown-red surface (lower right in picture above) is the Arnold family's tennis court.

The first time I visited the factory as a fledgling cameraman, August Arnold was expounding on the virtues of a then unheard-of technology: HMI. "Daylight, that's the future of movies," he predicted.

It's interesting that August Arnold and Robert Richter started out as camera operators in 1918 and then began a rental business, renting out their cameras. The first product they built, even before the first Kinarri 35, was a lighting unit. History repeats. In 1924, Arnold built big 10K size mirror reflector tungsten fixtures. Lighting has been an important part of ARRI ever since. The factory has a good cafeteria, where Florian Bloch, Head of Product Management, below, began our tour.



Assembling ZEISS Compact Prime Lenses



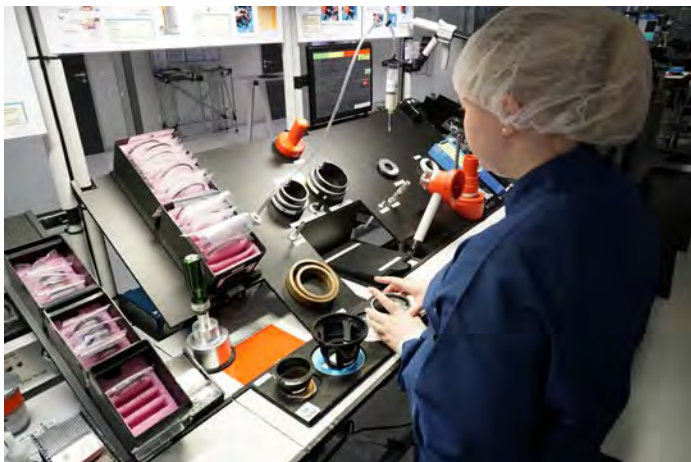
One piece flow: U-shaped work area. All parts and tools are within 25 cm reach. That's the reason the work surface is angled.



Barrel assembly of ZEISS Compact Prime lenses.



The supply system ensures that the "supermarket" is always stocked.



If any parts bins get low, a message is sent for a refill.



Checking the optical centering and finishing a Compact Prime.

Interview with Jarred Land, President of RED



Jarred Land with RED Weapon 8K Camera, photographed with a RED Weapon 8K.

JON FAUER: Jarred, I think you and I first met at AbelCine a while ago. It was before RED.

JARRED LAND: That was probably at a DVXuser BootCamp that I used to hold at AbelCine in both LA and NY.

I remember Pete telling me, “Say in touch with this guy because he’s really smart.”

Pete and his brother, Rich, are great guys. I love the business they have built and their dedication to customers. I like to think that some of that rubbed off on me and how we do things at RED.

How did you get started in this business?

The long story or the short story?

Let’s do the long story.

Back in the early 90’s I owned a bike messenger company in Vancouver, British Columbia, Canada. One of my clients was Robert Shaw, who was part of the Shaw Studios family.

The famous Shaw Brothers: Sir Run Run, Runme...

Exactly. Robert was part of that family. Apart from the studios and their production company, they owned quite a few commercial spaces in downtown Vancouver. Entire highrises. I became close friends with Robert’s wife, Martina, who worked in one of those buildings and she encouraged me to make a documentary about bike messengers and the bike messenger subculture. I thought that was a great idea. So, I started researching cameras...

That’s when the Panasonic DVX100 camera was first announced. I bit the bullet, put my order in and set out to learn how to use it.

After I received the camera, I realized pretty quick it wasn’t as easy as I thought it was going to be. Since I had a day job and couldn’t afford the time to go to film school, I created a website dedicated to that camera and named it DVXuser. It was purely for selfish reasons—I just hoped it would be a quick outlet to speed

up my learning process by being able to directly ask questions to other camera owners and operators that knew a heck of a lot more than me.

That ended up working well. Things were pretty slow at first. But, then, it kind of exploded as more and more members started signing up. It was great—I actually started to learn how to use the camera, and I had an army of incredible members full of knowledge willing to not only help me but everyone else.

While I was trying to figure out the pieces of the courier documentary, I started getting jobs with other people around town through DVXuser.com. They recognized me from the website and asked if I was available. So, I’d go out and shoot random things.

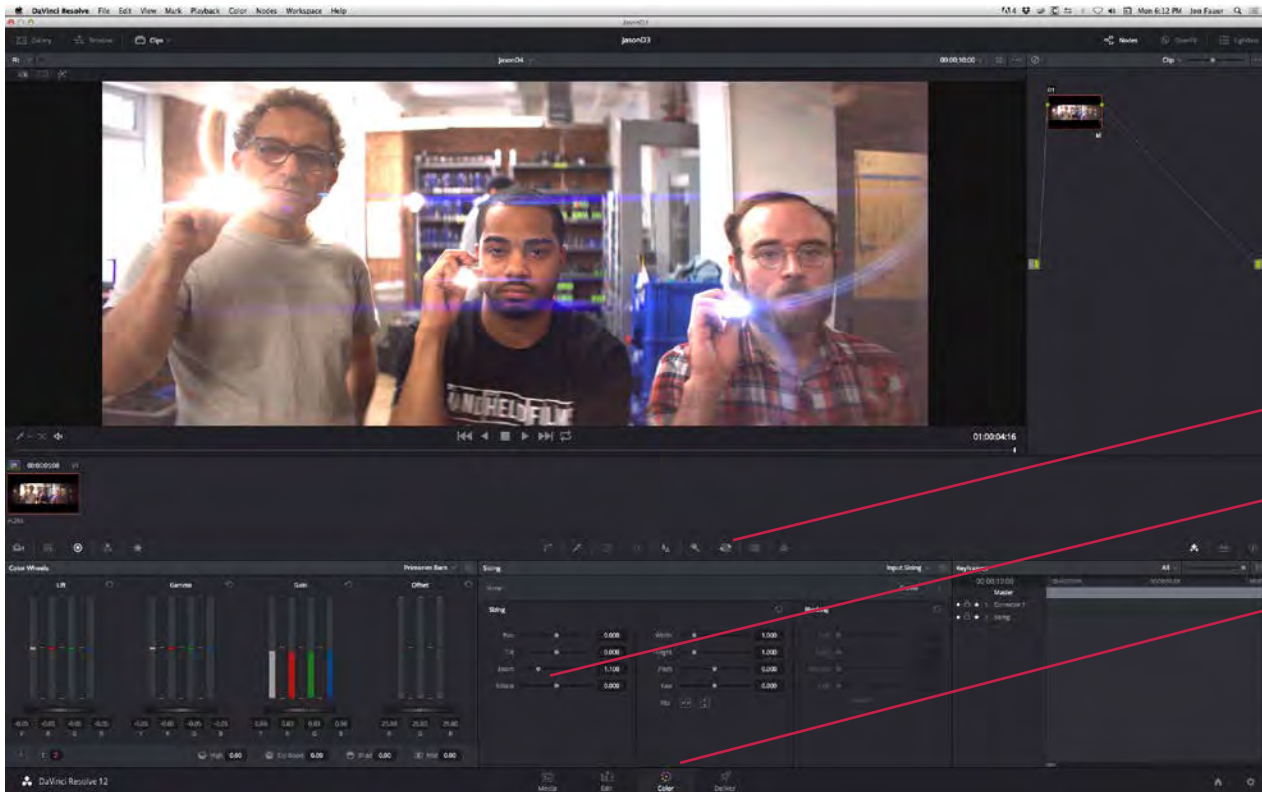
One of those calls was for a feature in Victoria. I went in way over my head with a little bit of knowledge mixed with a whole lot of confidence and, somehow, actually pulled it off. One of the producers was from Los Angeles and he liked my work so I started flying to L.A. to shoot things for him. It just never slowed down from that point forward. I ended up giving away my courier business, moving to LA, and shooting full-time while DVXuser continued to grow in the background.

Along the way, Jim Jannard, who also had picked up a DVX100, became a member of DVXuser.

I remember I was shooting a documentary on mercenaries in Sierra Leone, West Africa, when I first heard from Jim. He had a big idea and he started hinting about it. When I finished in Africa and got back to Los Angeles, Jim got in touch again, and asked, “Why don’t you come visit me at my office so we can talk?” I remember driving down to the Oakley headquarters and turning the last corner and being blown away by the building.

Jim and I hit it off immediately. He showed me a lot of things he was working on and, honestly, it took all of 5 minutes for me to be all in. I had no doubt that what he was setting out to do was

DaVinci for DPs: Desqueezing a7RII Anamorphic with Resolve 12



Step 10 details of using Sizing Button to zoom past vignetting edges:

Sizing Button

Zoom: 1.1

Color Page

1. It takes 12 simple steps. Open DaVinci Resolve 12, either version.
2. Create New Project.
3. In MEDIA Page, click the gear at lower right for **Project Settings**.
 - Select MASTER PROJECT SETTINGS, and set your **Timeline Resolution** to CUSTOM and enter “3840 x 1600” processing (which is your 2.4:1 ‘Scope rate’). Set Pixel Aspect Ratio to SQUARE
 - In IMAGE SCALING, set **Input Scaling Preset** to **Scale Full Frame With Crop**.
 - In OUTPUT SCALING PRESET, click on **Match timeline settings**. Set **Mismatched resolution files** to **Scale Full Frame With Crop**. Then, click **Save**.
4. Time to import our Sony a7RII MP4 clips. In the LIBRARY window, top left—find the folder with your media. If you’ve cloned the SD card, drill down to PRIVATE - M4ROOT - CLIP. Double click or drag to the MASTER window.
5. Select the clips (represented by thumbnails) in the MASTER window that you want to desqueeze and crop. (You can drag to select or Command-a.) Right click one of the clips. This opens a big pop up window. Select CLIP ATTRIBUTES.
6. Next, here’s is the key to successful de-squeeze. In the CLIP ATTRIBUTES pop-up, select VIDEO, and go to the **Pixel Aspect Ratio** drop-down box. Be sure to select CINEMASCOPE. Click OK.
7. Go to the EDIT Page.
8. Right click on a clip and select **Create new timeline with selected clip**, or create a timeline by right clicking anywhere in the media pool and selecting **Create new timeline**, or simply drag and drop a clip into the timeline area. Edit selects as needed.
9. From anywhere within Resolve, right click a clip or a node to select a LUT from the pop-up menu, e.g. 1D LUT - Sony SLog2 to Rec709. Here is a cool new alternative to using a LUT on the SLog footage: Go to PROJECT SETTINGS in the COLOR mode, click MASTER

PROJECT SETTINGS, then in **Color Science** select **DaVinci YRGB Color Managed**. Next, in **Color Management**, select **Color Management Settings-Input Colorspace**, and in the box, scroll down to **S-Gamut/S-Log2**. In the box below, **Timeline colorspace**, select **Rec.709 Gamma 2.2**. This is a quick way to grade all the footage without needing to use any LUTs.

10. Tweak the **Color wheels** as desired, lower left.
 - If there’s any visible vignetting, we can tweak now. Select the **SIZING** button above right from the Color Wheels (3rd from left of fire icon). Adjust Zoom as required (maybe a slight push in. You can save this to the node. In the top menu: Color-Memories-Save Memory A. (Later on, you can recall this: Color-Memories-Load Memory A.)
11. Time to Deliver. Click the DELIVER mode at bottom of screen.
 - In the OUTPUT window, top left, be sure **Render Timeline As** is set to **INDIVIDUAL SOURCE CLIPS**. Otherwise you’ll wind up with one long clip instead of individual takes.
 - To render for editing, we selected Quicktime ProRes 422 (HQ). For Resolution, we checked Render as source resolution, which is 3840x1600. Very important: set the destination folder: click BROWSE, then select a folder. Name your output file.
12. Select your takes. Click **SELECT ALL CLIPS** on the left side of the timeline.
 - Select **ADD TO RENDER QUEUE** and then click **START RENDER** button on the right side of the screen.

On a new Mac Pro, rendering occurs roughly in real time. Our 20 minutes of Sony a7RII footage rendered to .MOV unsqueezed in 19 minutes, ready for editing in glorious 3840 x 1600 de-squeezed anamorphic 2.4:1 Scope.

Thanks to Jason Druss of Blackmagic Design for his guru guidance. Download free DaVinci Resolve 12:

www.blackmagicdesign.com

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