Shooting for Black & White

Part II: Camera Format

written by Ryan Patrick O'Hara

Part one discussed the aesthetic (or lack of) use of black & white in film. Part II will explore the different camera formats available to the modern cinematographer making a black & white picture. This article and the next (part III) are the original intentions of the 'Black & White' article series. Among many subjects, this article will focus on shooting black & white film stock, color film stock *for* black & white, and HD/digital *for* black & white.

At this time, it may be noted this article is not going to explore black & white lighting technique such as noir films. The article will focus on technical advice for achieving a strong black & white image albeit general mood or genre. Examples given will attempt to focus on modern black & white films.

Shooting On Black & White Film Stock

Black & white film stocks were the first developed and remained popular decades later even after the initial advent of color film stocks. Only when color film stocks grew increasingly popular and most importantly, more affordable, did color become the standard cinema experience. Since that time, the use of black & white has been used sparingly.

As of this writing, the current trend appears to be shooting color negative stock and removing the color information in printing or digital intermediate. There are several pro's and con's to this method, which will be covered at a later time. In my opinion, the main reason modern film makers have all but abandoned true black & white film stocks is due to the lack of technological development otherwise found in the new color film stocks.

This isn't your grandfathers film stock! ... oh wait, yes, actually it is.

This is somewhat true. Take a look at Eastman Kodak and Fuji Film; the largest (and arguably only) producers of professional 35mm film stocks. As of this writing, Eastman Kodak offers only two black & white negative film stocks, while Fuji offers none! The two Kodak stocks available are Eastman Double-X 5222 and Eastman Plus-X 5231.

Eastman Kodak Plus-X 5231 was introduced in 1956, although initially under the name Plus-X Panchromatic Negative film, 4231. Double-X 5222 would soon follow in 1959.

There has not been one black & white film stock available to the modern cinematographer introduced since 1960. Before I continue, 5222 and 5231 have been a very renowned and successful film stock. As for the main reasons I have observed for their desertion has been because of the lack of technological improvements found in their color negative counterparts. These features include faster ISO/ASA ratings, improved grain, and higher latitude.

It appears the modern use of 5222 & 5231 has fallen mainly to those who wish to better attain the vintage look, which these film stocks can provide. Relatively recent black & white films shot with either 5222 and/or 5231 include: I'm Not There (2007), the beginning of Casino Royale (2006), Memento (2000), Schindler's List (1993), and Kafka (1991). If you have read, Shooting For Black & White: Part One you should already know all of those films with the exception of Memento, used black & white film stocks to attain the look of older films. For example, an excerpt from the article "Deconstructing Bob Dylan", written by Jon Silberg for *American Cinematographer* November 2007, states:

> Lachman filmed Jude's story on Kodak Plus-X 5231 and Double-X 5222 black-and-white negative stocks. "I know the recent trend with black-and-white scenes in movies has been to shoot color and transform it into black-and-white through printing or DI techniques, but the thing I wanted to reference was the way films looked in the Sixties in terms of exposure, texture, grain and latitude," says Lachman. Working in black-and-white, he continues, is about more than just getting a monochromatic image. "Kodak hasn't improved those stocks. If I shoot Double-X in 2006, it's like shooting it back in the Sixties; it only has about 1.5 stops of over or underexposure. Also, they haven't T-grained it the way they have their color stocks."

Another article, "Schindler's List Finds Heroism Amidst Holocaust" written by Karen Erbach (*American Cinematographer*, January 1994) discusses the use of black & white film stock:

> Once Spielberg and Kaminski were in actual preproduction, the time had come to finalize decisions, such as which film stock to use. Against studio hopes, the final print of Schindler's List would be black & white. The filmmakers had to decide between shooting on black & white negative or draining the hues from color negative. Spielberg wanted to colorize specific elements in certain shots, ultimately forcing the duo to utilize some color negative. Kaminski's big concern was

> whether the manipulated color would match with the black & white.
>
> "After doing some tests we used Kodak color 5247 and 5296 to match with black-and-white 5231 and 5222, which are the only available emulsions," explains Kaminski. "We had to really fight with relatively inferior and dated film stock, basically because technology has changed but the film stock hasn't.

A letter was sent to Eastman Kodak asking for an official statement on why there has not been a new black & white film stock released since around 1960. A quick reply was received from the good people at Kodak. As it turns out, it is not just coincidence that the vast majority of cinematographers use the stocks for a 'vintage' look. As demonstrated by a small excerpt from Kodak's response states:

> During past technology upgrades for these two B&W camera films, it has always been our intent to maintain the look of "classic" B&W film that our customers have expressed a desire for.

To greater surprise, the previous statements, regarding black & white stocks lacking technological improvements, is in need of clarification. The extremely informative and well-written letter from Kodak explains that although the fundamentals of 5222 and 5231 have remained the same in terms of look, Kodak *has* improved the stock with multiple minor, yet important, upgrades. These upgrades made the film stock more ecologically friendly, safe to manufacture, and reliable in performance. The letter, in entirety is available to be viewed HERE.

Despite Kodak's belief, I think a modern black & white film stock could benefit the film community, as it would offer a true black and white film stock but with further technological advancements currently held by color stocks such as faster speeds, smaller grain, and wider latitude. As of now, we do not have black & white film stocks being manufactured to their full potential.

Pro's and Con's:

Pro's:

Classic Look:

At this point one may wonder what could possibly be the advantages to using available black & white film stocks? Assured, there are advantages. The first, and most

obvious advantage is if the desired look of the black & white picture is to achieve a vintage look. In this case, 5222 & 5231 are very good base emulsions to start building the overall look upon. An excerpt from the article, "Schindler's List Finds Heroism Amidst Holocaust" written by Karen Erbach (AC Jan. '94), Kaminski discusses the comparison between black & white stock vs. drained color negative:

> The first test Kaminski performed was to find out if a manipulated color negative could pose as black & white. "We had two cameras side by side with the lenses at the same focal length, shooting simultaneously. One camera was loaded with 5296 color negative. The other camera had 5222 black-and-white negative. Don printed the 5296 on color print stock but pulled out all the color. The black-and-white was printed on standard black-and-white stock. We set up the projectors side by side for viewing. The black-and-white had a completely different quality than the drained color negative. The black-and-white looked much more realistic, with more grain, while the color had a faint blue tint."

As described, the realistic 'classic' qualities of the 5222 worked for Kaminski's look of a realistic documentary holocaust world. Many like Kaminski have used black & white film qualities to their advantage.

Tonal Control:

During production, black & white film stocks have a very useful advantage; they can utilize colored filtration. The use of color filters give the cinematographer a wonderful tool for manipulating and adjusting tonal separations by restricting selective wavelengths of color from reaching the negative. Within the American Cinematographer article, "Deconstructing Bob Dylan", written by Jon Silberg, director of photography Edward Lachman, ASC reflects on the use of color filters for tonal separation:

> "By shooting real black-and-white, I was able to use the same methods cinematographers used then to selectively alter tones, like say, using a Yellow 8, Orange 21, or Red 23A to introduce tonal separations. You can change some values if you use a DI to change color to black-and-white, but it doesn't feel or look the same in the values of tonal separation..."

Another example, once again, comes from the article, "Schindler's List Finds Heroism Amidst Holocaust" by Karen Erbach (AC Jan. 94). Kaminski discusses his use and testing of camera filtration and tonal separation:

> The next phase of testing involved filters. Kaminski explains how he was trying to brighten faces so that they'd appear white rather than grey: "Sometimes I'd succeed, sometimes I'd fail. I used yellow #15 and orange #21 to

> brighten skin tones. The principals in black-and-white are as such: if you have a red object and you apply a red filter, the red object will become lighter. Because most people's faces have a lot of orange, when you apply an orange filter, it neutralizes the orange, making the face appear lighter. With red filters you have to be careful. We used red #23 on occasion, but the faces became too bright and the lips became to dark. Lips have a lot of blue in them and red accentuates this while increasing the contrast. Another technique was to 'over-light' the faces according to my meter; when we saw the dailies, they were the perfect tone of white."

Shoot Film, Print Film, Release Film:

Another advantage of shooting black & white film stock for a black and white picture is the ability to photograph, process, time, print, and release the picture in a photochemical process; skipping the process of a digital intermediate. Although it is possible to shoot color film and print to black & white stock for print/release all photo-chemically, most instances often require the use of a DI. As of the time of this writing, digital intermediates are commonly 2k or 4k scans, a lower resolution product versus a film print. These films are also often projected on digital projection systems, also currently at 2k resolution in the majority of digital projection screens. A photochemical 35mm print can offer a greater resolution picture.

Cons:

Lack of Modern Qualities:

Disadvantages of using black & white stock are mainly due to aforementioned lack of advancement otherwise seen in color stocks. Kodak 5222 & 5231 are both slower speed stocks, yet still retain grain usually reserved for faster stocks. The black & white film stocks also have less latitude and therefore tend to carry more contrast. These qualities aren't necessarily bad, as they are sometimes desired. But *not* possessing higher latitude is restrictive to the modern cinematographer, and may simply drive him/her to the color stock alternative. All of the 'old film look' qualities can be attained in modern stocks by using lighting, filtration, developing, and printing techniques. Therefore, why are these stocks settling for the least common denominator? Perhaps, instead of preserving the "classic" qualities of a film stock for a niche look, make a faster, cleaner grained- high latitude stock everyone can use and those who desire, may degrade/alter the image to achieve a more 'classic' look at their discretion.

Post Production Headaches:

Sadly, disadvantages to black & white film stocks do not end at the production stage. As the world embraced color, the use and demand for black & white has decreased allowing many facilities and technologies to become less attentive with the differing needs of black & white stocks. Many film labs and lab personnel are increasingly becoming distanced from the experience and knowledge of handling black & white stocks. Some labs will not even process it.

Cost:

When printing a black & white film for release, the best method to do so, would be on black & white print stock. Black & white print stock, used very seldom, is considerably more expensive. When a production company is sending out 3,000 prints, the price difference is a large factor. Many films will have select theaters play black & white release prints, while the vast majority across the country will have black & white on a color print stock, which saves money but inherits another set of problems.

Projection Heat:

Because of the silver nature of black & white stocks, when the release stock is run through a projector, the film can become very hot and start to warp/melt causing the film to appear out of focus and with varying densities in the blacks. From an *International Cinematographers Guild Magazine* article, "Razor Burn" written by Kevin H. Martin, Roger Deakins recalls an instance that happened to fellow Cinematographer Janusz Kaminski during Schindler's List:

> Deakins notes that releasing on black-and-white stock in this day and age is an undertaking not without drawbacks. "On Schindler's List [photographed by Janusz Kaminski, ASC], there was a problem with the amount of silver contained in a black-and-white print," he reports. "This caused too much heat buildup in some projectors, which as a result were more liable to experience damage while running hotter. To get around this, they wound up having to wax the prints. At this point, there's still a financial issue for us about how many prints will go out on the print stock.

In the article "Cinematography in Black and White" written by Bob Fisher for *MovieMaker Magazine* (Feb. '07), Frederick Elmes discusses projection overheating, during a screening of Jim Jarmusch's Coffee and Cigarettes:

> MM: Why did he want to shoot it in black and white?
>
> FE: Jim always saw these stories in black and white and I enjoy shooting it because it makes me think differently about the light. Technically, I learned a great deal, because these films were shot in different gauges in different years with

> different budgets using different laboratories around the world. We had 16mm, Super16 and 35mm negatives.
>
> We scanned them all at DuArt in New York, corrected the contrast and black levels digitally and made black and white digital intermediates. Then we made very beautiful pristine black and white prints, which looked great in the lab in New York. Jim took a print on the road to the Berlin Film Festival for a premiere screening with thousands of people, but unfortunately, parts of the film played out of focus because the arc lights in modern projectors are very hot and black and white film absorbs most of the heat because of the silver in it. The film kept popping in the gate and changing focus, even though the same print looked great in smaller theaters where the lamp wasn't as hot. This forced us to go back to the digital master, change the contrast to accommodate color intermediates and make color release prints.
>
> The contrast is not as good as black and white release stock and there will always be a little color in the image. I think it's time for a new black and white technology that combines the magical look of silver-based stocks with the projectability of modern color stocks.

Release to Color:

As Elmes mentioned, one way to circumvent the price/heat issues are to release a film shot on a black & white film stock on a color print stock. The drawback to this procedure is the color stock will always have a little color. The image will have a slight tint, depriving the audience of a true black & white experience. Robert Elswit discusses his experience testing a black & white film release on color stock, in the *AC* article, "Public and Private Battles" (Nov '05) written by Jon D. Witmer:

> Another consideration for the film makers was that Clooney wanted to end the film with a color sequence, which mandated releasing the picture on color stock. "The problem with printing [black-and-white] on color stock is that there's always a little color," notes Elswit. "As monochromatic as it might be, it's definitely still not as true as a true black-and-white print. There's always a shift somewhere."

Clooney would later throw out the color ending to "Goodnight and Goodluck" and Elswit happily aborted releasing on color print stock. He convinced Warner Brothers to approve printing the film on black & white print stock "even though it was significantly more expensive to do so."

Shocking!

Although not common, there are occasional occurrences of static discharge in black & white film stocks under specific conditions, usually in very dry environments. Perhaps best documented from the experience of Janusz Kaminski on the set of Schindler's List. A passage from "Schindler's List Finds Heroism Amidst Holocaust", recounts his experience:

> Kaminski thought he'd solved all his problems with black & white- that is, until shooting commenced. "We began to have problems with the negative discharge of electricity that happens only with black and white because of the silver content in the emulsion. We would have spots on the negative that looked like little dots with arms of lightning. Sometimes we would have lines running across the top of the frame like lightning in the sky. It's very hard to avoid, and we failed. I still don't know how to avoid it. I read some comments in American Cinematographer by Walt Lloyd, who shot Kafka, [and he said] that he had the same problems. Basically, the room has to be static-free. We'd spray the room and be careful when loading or unloading to avoid any friction between the winds of emulsion. Soon we realized that a lot of the static occurred at the beginning of the roll. So we'd shoot off sixty to eighty feet at the head of every roll, providing [some room] to protect ourselves. However there's still some footage that has static and people will see it. I don't think it's terrible- the image is not ruined- but it's unavoidable. We were shooting under harsh weather and production conditions. All those elements contribute to static discharge.

Some recommended methods of dealing with static discharge include:

1) Using a humidifier in the environment where the film is being loaded, down loaded, rewound, etc. Even having a humidifier on set, could benefit the film, albeit it does not interfere with other elements of the film. (set, hair, etc.)

2) Spritzing water into the surrounding air, to increase humidity. A plant mister or likewise instrument is sufficient. John Sprung a member over at Cinematography.com, goes even further and suggests adding, "a little Downy fabric softener to the water you spray around, it helps to drain static better than just plain water. Try 4:1 to 10:1 mixtures."

3) Placing a damp sponge inside the camera body.

It should also be known that you can have to much moisture. If this happens, the moisture will dry after the film is spooled. This can allow the film to slightly stick to

itself. Later at the lab when the film is unspooled, the stuck film will be ripped apart causing a spark of static, in essence creating an effect worse from what was originally trying to be avoided.

The Verdict

If you disregard the negative aspects of black & white film stock which are existent from lack of technological advancement, the prospect of shooting on black & white looks much more attractive, and perhaps more features would choose it over shooting color stocks. Until that day arrives, cinematographers must deal with grain, slower speeds, less latitude, and processing/print difficulties if considering black & white stock.

Shooting Color Film Stock

As you are now aware, limitations of modern black & white film stock has driven many cinematographers into the welcoming arms of more advanced color film stocks. Indirectly supporting this process, is the increasing use of a digital intermediate.

Pro's and Con's:

As with any medium, there are pro's and con's regarding the use of color film stock for the end product of a black & white picture.

Pro's

Advancements in Film Qualities:
After my previous writing, the obvious first advantage of using color film stock would be for the technological advantages in visual quality it possesses not otherwise found in black & white stocks. As stated earlier, there have been leaps and bounds in color stock improvement, which continue today. Increased film latitude, grain reduction, and faster exposure speeds among the obvious differences compared to the 'classic' look desired by 5222 and 5231 users. Thus, cinematographers who wish to shoot black & white, but not necessarily utilize the inherent qualities of older black and white stocks, choose modern color stocks. Robert Elswit talks about his decision to shoot Good Night and Good Luck in color stock in the article "Public and Private Battles" (Nov. '05), written by Jon D. Witmer for *American Cinematographer*:

> Although Elswit loved the idea of shooting Good Night on monochromatic stock, practical considerations led him to adopt the approach taken by Roger Deakins, ASC, BSC on The Man Who Wasn't There: shooting on color stock and de-saturating the images in post. Elswit therefore chose to shoot the picture on Kodak Vision2 500T 5218, which he rated at ISO 400. "I needed a film stock that would allow me to use zoom lenses in low-light situations," he explains. "5218 is twice as fast as the fastest black and white stock, [Eastman Kodak Double-X] 5222 and has a grain structure and tonal range equal to the slowest black-and-white stock, [Eastman Kodak Plus-X] 5231. After doing photochemical tests in black-and-white George and I decided 5231 gave us the look we liked best. By choosing 5218, I hoped I would be able to make its contrast and tonal range resemble those of 5231 in post."

In this case, Elswit did like the contrast of 5231 but, however, desired the speed and low grain structure of a more technologically 'modern' film stock. Had there have been a black & white film stock which had the speed, latitude, and grain structure of more sophisticated color negative stock, then Elswit could have shot with it, and achieved the contrast with either traditional camera tricks, in processing, printing, or DI, if necessary. In another article, "The Root(s) of All Evil" written for *American Cinematographer* by Jay Holben (Oct. '01), Roger Deakins discusses his work on *The Man Who Wasn't There*: (The studio had made an agreement with distributors that foreign distribution would be in color, against the wishes of the Cohen brothers.)

> That agreement forced Deakins to generate a negative that could work in both versions. As a result, he wound up shooting on color stock. "That wasn't such a bad thing, though, because I had been testing Kodak's Plus-X [5231, 64 ISO tungsten] and Double-X [5222, 200 ISO tungsten] stocks, and I wasn't very happy with the results," Deakins remarks. "I began testing color stock printed on black-and-white, and it was kind of a tossup. The monochrome stocks haven't really changed much for many years. They don't have the same [refined] anti-halation backing the color negative does, so you tend to get fringing and flares. They're also fairly grainy compared to the color stocks."

As you see, Roger Deakins shares a similar point of view and even offers an additional advantage of color film stock; the 'refined' anti-halation backing on the film negative, helping reduce fringing and flares.

Digital Intermediate Advantages:

If taking a color stock film to digital intermediate, the opportunity to control specific tones becomes possible, much to the similar effect of the colored filters used on black & white stock but with more precision and control, although many think it does not feel as 'right'. In addition, John Lindley, ASC, director of photography for *Pleasantville*, has had interesting comments regarding black & white film stock versus color film stock. Found in the article, "Black-and-White in Color" written by Bob Fisher for *American Cinematographer* (Nov. '98) he makes the observation:

> "When we tested black-and-white film, it was evident that by the time it was run through a recorder, it wouldn't be sharp enough to create the feeling of reality we wanted. Modern color films have multiple T-grain layers and therefore record much sharper and cleaner images."

The 'recorder' he is referring to is a scanning machine which will record every frame of film at 2k resolution, part of the process known as a digital intermediate. Yet again, we discover another advantage of color film stock, but as usual, only as a result of a lacking modern black and white film stock.

Although since the comments of Lindley, and as of the time of this article (2008), this specific disadvantage of black & white film stock seems to have been improved upon since the release of Pleasantville (1998). Another excerpt from the letter I received from Eastman Kodak reveals:

> In the early 2000's both the B&W negative emulsions were re-engineered and moved into Kodak's state-of-the-art coating facility to provide a more environmentally friendly film which also resulted in noteworthy improvements to the product's overall uniformity and batch-to-batch consistency. Also around the same time period, an extensive research effort was undertaken jointly with Ryerson University looking at incorporating Kodak T-Grain technology into the B&W motion picture camera films, only to find the current emulsion sets actually provide finer granularity.

The letter never states that the film stocks granularity were actually improved upon, but rather found through a study to be on par with the color stocks. Whether this was a result from other improvements around that time, or simply findings which disagrees with Lindley's experience, is unknown to myself.

Special Effects: Mixing Color and Black & White imagery:

An obvious advantage of shooting color film stock for a black & white picture, yet deserving of a quick mention, is when the black & white image is to be accompanied by color elements. Instances include moments from *Schindler's List* (intro, girl in red dress, etc) and the majority of the premise of *Pleasantville*. It is an easy conclusion that the removal of color is much more time and cost effective then colorizing elements in a black & white film. Therefore any special effects needing simultaneous color and black & white photography would be shot utilizing color stock.

Cons:

Digital Intermediate Disadvantages:

Although the digital intermediate allows the cinematographer specific and extra tonal control by manipulating colors before the final removal of color, the digital intermediate is not ideal to many cinematographers. The first, and most troublesome disadvantage is the loss of resolution. Despite certain improvement with future technology, as of this writing a complete photochemical workflow will result in the highest resolution film print.

Second, when printing to color print stock, the use of a digital intermediate causes slight tinting and color shifting in the picture, resulting in the inability to have a complete black & white image.

To quote the article "Losing Control", written by Bob Davis for *American Cinematographer* (Nov. 07), Director of Photography Martin Ruhe reports,

> "One problem is that black-and-white stocks are very grainy. The tests we shot already looked dated." So for Control, Ruhe ran two Kodak Vision2 color stocks through his Panaflex Millennium XL camera- 500t 5218 for every thing else- with an eye toward digital intermediate (DI) post-processing. "The tricky thing about the DI pathway is getting real black-and-white onto the screen," he says. "Most distributors aren't able to show expensive black-and-white prints, but when you write your DI back out to film, a shift of half a step in the print lights may result in a tinted image." Indeed, though the print that screened at Cannes convinced nearly everyone that the film had been shot on black-and-white stock, a couple of the reels projected at a press screening in Los Angeles had a slightly red or green cast.

In the article "Deconstructing Bob Dylan" (*American Cinematographer* Nov. 07). Edward Lachman, ASC noted this realization he had with Black and white stock (he shot both 5222& 5231):

> "By originating on black-and-white emulsion, you're able to maintain a truer black-and-white look than if you shoot on color stock and convert the images to black and white... This was confirmed to me by the colorist doing the final prints at Technicolor, Lee Wimer, who had encountered this problem while converting color to black-and-white on other projects. Apparently, when you do a DI, there can be additional color shifting from your original DI negative, especially when you're at the dupe-negative stage."

Tonal Separation:

The use of colored filters cannot be used in color photography. Instead, a digital intermediate can isolate and manipulate specific hues/tones. Despite the previously mentioned advantage of precision and control, digital intermediate requires the film to be digitized, losing its film resolution down to a 2k resolution, unlike the colored filters, which will not necessarily allow a film to leave the photochemical process.

Shooting Digital Video

Shooting film stock may not always be possible due to creative, financial, or logistical means. In this case, many turn to HD video to shoot a film, which will have a final black & white image. Digital Video is simply a one-flavor medium: color. The process is much like that of color film stock.

Pro's and Con's:

Pro's

Resolution:

Although shooting digital video and color film stock (most likely) will both go through a digital post workflow, digital video will not need to be scanned digitally because it will always be available in its native format and resolution. This spares the digital video from the costly and potentially negative process of scanning. As time progresses, film will be scanned at higher resolutions, as will digital video be shot at higher native resolutions.

Tonal Control:

Digital video cannot use color filters for tonal separation. They can appear to apply the same effect as in film, but run negative risks of doing strange things to the video picture such as artifacting, noise, and other unwanted effects. Instead, different hues and tones can be controlled via digital color correction before being transformed into a black & white picture. This is an artificial, yet more precise method of tonal control, versus the color filters used in black & white film stock.

Con's

Resolution:

Digital video still lacks the resolution of film stock. This statement is quickly becoming false with the development of Dalsa Origin and Red-One cameras, capable of a close 4k picture. Despite 4k not being of film resolution, they are signs of the times. It is a matter of time before a digital camera can match not only the 35mm film frame size dimensions, but in actual resolution. The resolution gap is quickly narrowing. As of now, film is still possesses more resolution.

Tonal Control:

As mentioned, colored filters should not be used on digital video. This is not a terrible negative because unlike color film stock, digital video does not need to be scanned for DI and can have hues and tones manipulated at full native resolution, even if that may be equal to scanned film resolution.

Color Space:

Sadly, most digital video cameras, at this time, decide to use compression in the video signal to keep the data stream reasonable. A large part of this compression is the color space. Color space can be described by a system of three numbers. The optimal color space is 4:4:4, meaning each pixel has its own individual brightness and color level. Unfortunately, at the time of this writing, very few digital video cameras offer a 4:4:4 color space. Many cameras are 4:2:2, 4:2:0, or even 4:1:1. This means each

pixel is its own individual brightness, but to save information, is assigned a 'color', which is the result of a median of surrounding pixels. To find out more about what this all means please read my article on color space. Even uncompressed RAW cameras, such as the Red One are not true color space! Bayer pattern sensor chips use an even greater but perhaps more accurate averaging system.

Video Previewing:

Digital video cameras are all made for color acquisition. At times, there may not be an easy way to capture black & white, or preview it in camera. Cameras may have the option to desaturate an image in a menu option, but it will not be an optimal way to preview the black & white image.

End Thoughts:

As of the time of this article, Black & White film stocks are suffering from lack of technological improvements given to its color counterparts. Color film stocks are capable of a very nice black & white image, but often will require a DI limiting its potential resolution, extending time and cost factors as well. Digital Video cameras do not need to be scanned as color film stock does, but its resolution is currently inferior to that of film stock. Each of these three methods have been ideal for many large Hollywood productions, as to prove there is not necessarily a wrong way to go about it. Hopefully by now you know the advantages and disadvantages of each format and you may decide with an educated mind, which medium serves your needs best.

Best,

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