KEEPING PACE

A Monthly Newsletter Devoted to the Darkroom Arts

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The Advantage of Knowledge

The advantage of knowledge?
Many of us make color prints without any regard to the curves shapes of the subject or of any thought of densitometry or sensitometry because the materials that we use have already gone through these functions as a result of the manufacturers processes, especially if we make Cibachrome, Ektacolor, Fujicolor, or any of the other color prints that just require exposing and processing.

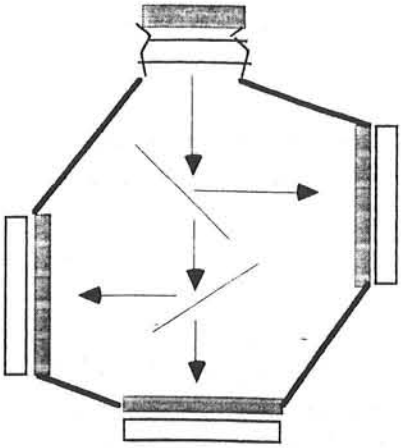
The manufacturer has made the material in such a way, that all we have to do is find the filtration, expose the material, and hope for the best.

Sure, we use filters to correct some of the overall color balances, but little else. However, we certainly take credit for what the manufacturer has already done for us.
The fact that each color transparency film manufacturer has to be aware of the color of the exposing light (daylight or tungsten) in order to make his results look correct is a major concern for all of us. If we inadvertently use the wrong film, (Tungsten) in a daylight mode. we will get a very blue effect in our processed film. And a very warm effect will occur will occur if daylight film is used indoors under tungsten lighting.
However, these are extremes.
In actuality, even a change of 50° or 100° Kelvin, in any direction, from the predetermined degree of 5000° Kelvin (daylight) or 3200°Kelvin (tungsten) will make a change in the outcome.

Try shooting 3200° film under regular household light bulbs (2800°) and notice the difference.
We somehow seem to live with this problem because of the flexibility of the material and because our eyes don't really see or care about the difference.
That is, unless we are truly concerned about accuracy. A sunset photograph may be distorted, and this distortion may enhance the image, but we think we did it.

For instance. In the "good old days" before color transparencies were available, the only instrument for capturing color images was a special camera called a "one shot camera."

In the absence of this "gadget," the photographer had to shoot 3 negatives, one at a time, though the



One version of the professional; color camera. The "One Shot Camera.)

three separation filters, which were known as A-B-C filters.
(These ABC filters were very inadequate, but this is all we had.)
These separations had to be processed in such a manner that the three images were in actual contrast balance. This was a fact that could only be proven by somehow inserting a paper grey scale somewhere in the image area, so that it could be measured and plotted. However, even the measuring of the negatives was a difficult job to perform. Densitometers were as scarce as hen's teeth.

So little was known about the curve shape distortions and the importance about the lack of matching balances that it is amazing that color prints, (Carbro's) were made to look acceptable. The fact that they were color images was all that was necessary for the general public to give the images high praise.
In these early days, some more scientifically oriented photographers would use a new gadget called a color meter and use it to determine how far off the color of the light would be from what the "one shot camera" was tuned to.
A "one shot camera" could be set for shooting portraits using a 3200 ° Kelvin light source. The speed of the film, and it's sensitivity was important. The camera's were produced to be used with specific plates in order to have close density balances after processing. Sometimes, neutral density filters were added to specific filters to somehow insure that the results of the exposure on the three sheets of glass plates would be close enough to be considered usable.
But somehow, if the electrical voltage was increased or decreased, the color of the light source would change as much as 200 ° Kelvin. What does one do in this situation.
Simple.
In the "old days" we would purchase a set of "decimered" filters that you could add to the lens which would allow the color of the light passing through the lens to be altered so that it would again match the requirements of the camera.

If a "one shot camera" were used outdoors with daylight as the main light source, (5000°) the Kelvin temperature of the light would change as the day wore on.

The high point of the day was between 10 AM and 2 PM. The results depended on accuracy.
This was primarily for the advertising photographer.

But what about the "one shot camera" used in Hollywood by the Technicolor Corp. Consider the complications of the film matching the camera's built in film speed and color sensitivity.
The shots in the studio were easily managed because the color quality of the light was fairly standard. However, the lighting outdoors must have been a nightmare. The color of daylight changes constantly, as does the weather. Decimered filters were used as a matter of course, otherwise, white garments would pick up the different changes and the whites would then look pink or bluish.
The great films such as "Gone with the wind" demanded much attention from the cinematographer and his assistants. The next time this film appears on TV, notice the accuracy of each scene.
Then along comes color negatives films. The need for matching the quality of

the light source to the requirements of the film are, for the most part, gone. Why? Because when making the print, the technician has plenty of room to make the overall color corrections so that the eye is satisfied. This is what I mean when I say that the need to know about the technical aspects of photography are probably gone forever. Especially since the advent of the scanner.
The Dye Transfer technician had to know all about these problems or he would soon be out of business.
The new digitized computer systems do all of this work for us. Transparencies are scanned very accurately within minutes, and if the need for curve shape corrections were necessary, they can also be done within seconds.

How does all of this affect the average color printer? Well, the ability to make creative corrections is still there. This old fashioned knowledge will surely still come in handy.
First let us pick a specific process. Let us choose Cibachrome.
For instance. If you have a transparency image that consists of a multicolored balloon, and one or more of the colors in this balloon are not as rich or as pure as it could be, it is possible to make local corrections using various methods.
Let us take an area of interest. This area should be a bright green, but it is a dirty green. What do I mean by dirty? Green is green, right? Not necessarily. All colors that we usually see are made up from the three primary color, Cyan, Magenta and Yellow. These most pure primary color are actually single colors, and as a result, these are **true** primary colors.
Pure red, green and blue colors are also called primary colors (secondary) and are made up from two of the previously mentioned **true** primary colors.
Red is actually produced by combining Magenta and Yellow. Green is produced by the combination of Cyan and Yellow, and so on. The degree of richness of the color is determined by the percentage of each of the two colors. Usually what makes red color look dirty is the amount of cyan that has crept into the red color.
If enough cyan is added to the red color, it will eventually turn neutral or black.
Remove the cyan by degree and the red color will get brighter and brighter until it virtually screams at you.
The secret of making very colorful prints is to remove all or some of the unwanted color from the different "pure" colors until you get the desired results.
How do we make the green area of this balloon more pure than it looks now?
Isolation. That's how.
Somehow, a particular part of the image must be isolated from the rest of the image so that "tricks" can be used to affect this area.
The "trick" is to add an additional exposure to the selected area by using a "pure" green separation filter to further brighten the area. This system works great.
Thereis more than one method that can be used to isolate an area.

Method # 1
Using 4x5 transparency.
Punch the transparency using a diagonal film punch.
Place the transparency on a horizontal light box, on a set of temporary pins and tape it down so that it will not move.
Place a sheet of punched Rubylith Film over the transparency, on the same set of register pins, emulsion up, and using a sharp Exacto knife, score the outline of the area in question. Do not cut through the Rubylith film or you will damage the original transparency. After the Rubylith film has been scored, peel off the cut out area so that you have a clear window. The area has successfully been isolated.
Make a duplicate of this Rubylith mask using Kodaks LPD4, a reversal material.
The finished result would be black film with a clear area.

This is usually called a "frisket."

Method # 2
Place the punched 4x5 transparency in a contact frame, also using register pins.
Use a red separation filter, (Red 29) and using a sheet of punched Panchromatic Litho Film such as Agfa's P 911, make an exposure and process it in a strong Litho developer such as Kodak's D11 or any Litho film developer. Almost everything else will appear on the litho film except the green area.
This isolation method may not be as clean as method #1 but the use of "Farmers Reducer" (a bleach) and black opaque will finish the isolation effort and the edges will be more accurate, photographically. This is called a "frisket."

The aim with either method is to isolate the area.
To make accurate "corrections" it is necessary to have a registration carrier for your particular enlarger and to be able to secure the enlarger from moving, once the size and focus has been established.

The easel should be a vacuum registration easel, with a separate punch and sets of register pins, but a simpler method would be to use a large film or paper box, placed under the enlarger, open and taped to the exposing area. The unexposed Cibachrome paper is placed into this box, emulsion up, of course, and taped along the edges so that it will not move easily. When the paper is exposed, simply place the box cover over the box, and in subdued room light, make the changes in the carrier and then shut the light. uncover the box and continue the exposure.
With Cibachrome the "trick" is to:

1. Make a normal finished exposure on the Cibachrome paper.
2. Cover the box.
3. In subdued room light remove the carrier. Orient and add the isolated "frisket" to the same pins in the carrier, and replace the carrier into the enlarger.
4. Add a green separation filter to the light source. (Or filter pack.) Shut the room lights and carefully remove the box cover and continue the exposure. How much more? Only you will be able to determine this question. This is a "trial and error" method. You decide this part of the test.

You have an option of using any filter you wish, If you wanted to kill the purity of the green color, add a red filter to the pack and re-expose.
Remember, each time you add exposure to the Cibachrome material, the area will also get lighter.
This is also the same technique to be used when using a "post highlight" mask.
First , make the final exposure, close the box lid, remove any contrast mask you may have in the carrier, add the highlight mask to the transparency, in the same orientation, and replace the carrier into the enlarger. Remove the box cover and give the paper an additional "bump" exposure. The results will astound you.
This is all part of being creative.
Another "method" would be to add dyes to the area in question. In this case, you must use a sheet of clear film, also punched, placed emulsion up, (otherwise the dye wouldn't adhere properly,) and pinned to the original transparency. This addition of dyes to the film would result in the area becoming darker, and if the wrong color is used, even dirtier. Again, this is your print. I am only giving you options that you may not have been aware of.

What would be the approach if this were a Dye Transfer print?
The image can be isolated in the same fashion, but this not always necessary, because the necessary final mask is made differently.
Here is how.

After the making of the separation negatives, a positive is made from the appropriate negative, and using the "frisket" a negative is made of the area in question, using a relatively weak film such as Kodak's Pan Masking film. The resultant weak image (a negative) is used with the appropriate separation negative when making the matrices. The result is a removable of some of the unwanted color without making the area flat. This method works great. And it is yet another tool in your quest to be creative with your printing.
The best possible thing that could happen to anyone with the skills that were used in the days before digitized images is that the knowledge that was once important can still be used with digitized systems. If you know that the original had a flaw in it's curve shapes, adjustments could be made to restore the correct curve shapes and make for a more accurate print.

I have mentioned the problems with the "one shot camera" and it's inability to make the adjustments to allow for more accurate negatives when the color of the light was not accurate.. Today's Color Carbon prints are susceptible to the same problems. Fortunately, we all work from transparencies, instead of camera generated separation negatives. If your image is scanned and corrected with a high end workstation, the results should be fine. But, if we see a definite problem with the original transparency, the corrections now necessary can be made so quickly that, if you are my age, you won't believe it.

Speaking of Carbon prints. Charles Berger has announced that he has just about perfected a method where anyone that has separation negatives saved for all these years can use his materials and produce a three color carbon print. The color carbon sheets must first be flashed in order to hold the highlight areas before making the actual exposures.
This means that if you have any size separation negatives, you can order some material from Charles and he will assist you with information about how the system works. **Call Charles at 408-335-2169**
The only other equipment you will need is a small plate maker available from any graphic arts supply company. The unit should be equipped with an ultra violet light source. The rest of the equipment is easy to obtain. A sink, some trays, a register punch and a set of pins. Try it.
The new Kodak scanner and CD discs are making it possible if you have a color computer, to make corrections on your own computer screen, save it in a removable system, send it to Bill Nordstrom's EverColor company, and they can make you a set of screened separation negatives in sizes up to 20x24.
The beauty of being able to see the results of your correction on a screen makes the magic and the cost more palatable.
In fact, if you wish, Bill will scan your own original, and if you have the system that will work with his equipment, he will send the scanned image back to you, on a disc or tape, so that you can be the creative eye that the system requires.
The resultant prints are outstanding. The screen is not visible to the naked eye.
Call EverColor at 916-939-9300 and find out whether your equipment is what is needed to make this transition. If quality is really what you are after, remember, Bill's scanner is a high end Scitex, one of the finest scanners in the world.

In my last issue, I described the feeling that I had when I first saw a Carbro that Charlie Thill had made at Nick Muray's studio in New York in the late 1940's. All these years have gone by and I have made reference to this particular print many times. I have just been reminded by

Frank McLaughlin that he and Fred Remington, both of whom worked at Muray's studio, had completed the print. The original image was not shot using a one shot camera or produced by ABC exposures, but instead, was shot on Ektachrome film and separated by Frank, who also assisted in the assembly of the color images. My hat's off to a great image and a fantastic print production. I wish I had one of the posters that was eventually produced from this great print.
Again, it boils down to the quality of the printer. Remember, there are printers and there are printers, and when a print can do this to me, I salute the printer.

For the enthusiast among you who want to make their own prints,call Rene Pauli in San Francisco and I am sure that he will be happy to discuss his approach to his version of Carbro. His prints are excellent.

Dye Transfer. Now what.
One of my subscribers in Japan said that he called the people that he knew at Fuji in Japan and was told that they had no interest in producing the matrix film. National Graphics said that they also have no interest. This makes it almost impossible to understand. A process as great as the Dye Transfer process is should not be allowed to die because of the want of profits alone.
A number of truly fine art photographers who make their own prints and have many sets of matrices just waiting to be printed will be left out in the cold. This is a truly unfair decision. The life's work of artists such as John Warzonek, Ctein, Dennis Brokaw, and Elliot Porter may never again be able to be reproduced, except by the newer digitized methods.
Joe Holmes, the famous nature photographer has decided to continue to make his extremely colorful and manipulated Cibachrome prints and then have the finished prints scanned and converted to screened separation negatives. He is getting set up to be able to make large UltraStable carbon prints. He already has an outlet for his work and I'm sure will manage to get his work seen and purchased with little difficulty. To begin with, he will still concentrate on making his own images via the Cibachrome process. He is equipped with the latest version of an automatic Jobo processor that contains a large volume of chemistry and many processing tubes. Once he has established the correct masking and color pack for making exposures, he can then expose many prints at one sitting, and load as many tubes as he can and proceed to process the first image and be ready for the next image as soon as the machine is free.
For his Ulstrastable Carbon print, all he requires is a good scan of any finished print, without resorting to any corrections. He simply wants a straight copy of his print. His set up for making large prints is unique. To squeegee the pigment sheet to the receiver sheet, he uses an up to date squeegee system designed for making silk screen images.
If I know Joe, and I do, his prints will look great.

The EverColor process is picking up steam. I have seen some prints recently that were made from various sized originals and they were excellent. The digitized systems are here to stay. Many fine art photographers are having their images produced by Bill Nordstrom and his crew at EverColor.
As I said at the beginning of this newsletter, knowledge of the manipulation of the curve shapes was the main ingredient needed to perform miracles in making Dye Transfer color prints. Now, this important function and knowledge is performed automatically by the scanner and workstation.
Some programs now available will show you small thumbnail images with variations of color balances

and densities on a screen, and you can select the one that looks most inviting to you. Then, if necessary, this choice can then be further changed to make a final image.

I used to worry about "color management." This is a system that allows you to scan the image, look at it on a screen, and hope that what you see there will be the same result on paper. This has been solved. Kodak has such a system that ties all of the steps together and makes the results look like the screen images. And the cost is very low for this amazing achievement.

EverColor's images not only match the screen to the final print, but also to the Iris print used as a proof.

One company called Nash Editions, in Los Angeles, has invested in a large flat bed scanner that can scan large paintings as easily as smaller transparencies and then reproduce the images using a 30x40 Iris Printer. This is a true departure from the photographic lab as we once knew it.

No darkroom is needed, as there are no trays, or enlargers, timers, contact printers, or any of the familiar tools needed to make quality prints.

Just a Scanner, and a great workstation are needed to adjust the images to the desire of the client, or of the operator of the workstation. Then, with a push of a button, the Iris printer goes to work and produces very beautiful and accurate print. Any kind of paper can be used to convey the Iris dyes and inks.

The only drawback to this simplified, but expensive procedure, is the inability of the inks or dyes to withstand the torture of time. The dyes are not currently stable. The company is trying to find dyes that will withstand time, or liquefied pigments that can be used with the very fine apertures in the spray jets without clogging or spitting. If this part of the problem can be solved, then Nash Editions, or anyone else that has the money to purchase the same expensive equipment, will be in a commanding position. Their market place will include major galleries as well as fine art photographers.

What a complicated life. When I was making the prints for the advertising agencies in 1982 in San Francisco, we had no idea of the magnitude of the digitized revolution.

However, one day, I received my weekly copy of MAC magazine (Media, Agencies and Clients,) a magazine that catered to the advertising agencies, in which the center spread consisted of two pages of similar portraits of the comedian, George Burns.

The image on the left page consisted of George with a cigar in his hand and with the cigar smoke rising through the image and through his face. The cuff on his shirt sleeve was wrinkled and turned up, as was one end of his collar. The eyeglasses also had strong reflections in the glass area. Otherwise, the image looked great.

The right side of the page consisted of the exact image but with corrections. Gone was the area of the smoke that entered George Burns face. The shirt sleeve cuff and shirt collar were perfect. Not a hint of art work or retouching, but just perfection. The highlights on his eyeglasses were just about eliminated. Just a hint of reflection was left so that you knew glass was in the frame.

The copy read more or less as follows.

This reproduction was scanned and corrected in 15 minutes.

I turned and said to my partner, let us start packing. The only reason why Dye Transfer prints were used by the advertising agencies was because they could be retouched to perfection before reproduction. Without this reason, we would be in trouble, except for the fine art field.

The inside front page of this magazine consisted of

letters to the editor. A 4x5 reproduction of the front page of an electronic magazine was displayed, which consisted of a 5 piece strip-in. His letter said something like this:
"Let us leave the dark, dingy, dusty and cobwebbed cellars of reproduction known as Dye Transfer labs and join the bright and new sunny scanner systems. The 5 piece strip-in on this page took 3 hours to assemble, and another hour to get a new transparency that was complete and ready for reproduction, instead of the four or more days to get a print, then five more days for the retouching to be done. Roughly, seven to ten working days of waiting for an art director or his client to see the finished work."
He was right. I did not admit it at the time. I remember saying that nothing would take the place of the "hand's on" attempt, versus the machine version. After all, we were still quite busy making prints for the agencies, and like talking pictures, this phenomenon wouldn't last.
Boy was I wrong.

The one thing that we all still have working for us is our imagination. If we handle cameras, our eyes and brains should still be the tools we need for creating exciting images. However, we must keep our powder dry. Suppose some one, or some company takes over the cumbersome job of producing the materials needed for the Dye Transfer field, then we will still be in the same boat when it comes down to learning how the process works.
Knowledge is still valid and important.
If we continue to make prints using Cibachrome as our medium, we must still be able to make the masking and color corrections that make for an exciting print.

One of my subscribers has read articles that tell of the masking system used by others, as well as Ilford. They subscribe to just making very short exposures and maintaining the same developing time, regardless of the contrast of the transparency. In my opinion, they are dead wrong.
Of course, any mask at all will probably help the resulting print when the Cibachrome process is used, because of it's inherent contrast. However, unless the technician has complete control of the process, which is gained by education, and not hype, he will not enjoy the fact that remakes must be made quite often.
The complete understanding of the process is extremely important.
Being able to look at a transparency by using a light box, and then deciding upon a plan of action to take in order to make a creative difference in the print, requires that complete understanding of the process is necessary.
My original masking methods consists of a very simple requirements.

1. Know what degree of contrast your enlarger will produce with a given contrast range.
2. Being able to read and compute the density range of that required contrast.
3. Using mathematics, produce a fairly simple chart that will enable one to choose the correct exposure and developing time to make a specific density range in the mask which, when added back to the transparency assures the printer that all of the details in both ends of the image will appear in the print.

This is the meat of my process. It is as simple as that. My book and video go into the process of "how to" make the different steps so that accuracy is achieved without struggle.

Thanks.

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