

KEEPING PACE

A Monthly Newsletter Devoted to the Art of Darkroom Photography

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Quality of the image or it's longevity?

It would be great if we could have both within one process.

Longevity in color prints.

The Carbro process has been given a new lease on life because of new methods of making a print.

The original system used black and white prints as the source for the color print before combining with the colored pigments. This fabulous bromide paper manufactured by Ilford had 4 coatings of silver emulsions without a protective coating. The paper was great. It is no longer available.

One solution to the bromide paper problem was overcome by Reece Vogel, of Los Angeles, by making a Carbon print of each of the three separation negatives. The pigments are transparent and do not need screened separations. This process is laborious and

time consuming, but the results are worth it when the print is made correctly.

This control of this form of the process is in the hands of the printer. The separation negatives usually came from a "one shot camera" or a set of negatives shot one at a time, in a conventional camera through separation filters. However, enlarged separation negatives are now made from transparencies. The separations will be exposed by contact, so the size of the negatives are very important. The quality of the separations are most critical.

Using a plate maker as the light source for this new pigment is a necessity. The images are exposed, transferred, then washed off, one at a time. Registration is done by eye and the final support can be either paper

or white polyester film. The combining, and then registering of the images is the fly in the ointment. How can this be improved?

Charles Berger, the co-owner of UltraStable Color Systems, and the inventor of a new system, solved this time consuming stage by coating the materials on a stiff polyester receiver sheet, so that registration could be automatic. The pigments are quite stable.

However, in order to make a print, a set of screened separation negatives must be made. A set of 16x20 screened separation negatives costs around \$600. This takes the creative element out of the printers hands and places it in the control of the separation house.

The assembly then becomes a matter of routine.

An exposure is made from each of the 4 (yes, 4) separation negatives by contact onto the appropriate pre-sensitized colored pigments using a registration system and the plate maker devices sold to litho companies.

The images are then transferred to a white polyester receiver sheet. The first image, the yellow, is transferred to the receiver sheet. Then the receiver sheet with the yellow "image" is hot watered until a relief image appears. This receiver sheet is now dried.

Then the Magenta pigment is transferred to the receiver sheet. This too, is then washed with hot water until the magenta appears as a relief image. It will be in register with the yellow.

The same thing is done with the cyan and the black. The print will look like a fine screened print. The difference is that archival pigment is being used instead of ink.

The prints, when made right, are beautiful. However, in comparison to Dye Transfer, no further color correction is possible.

The original system required a temporary support material that was finally transferred to a final support. These materials were actually photographic papers and would expand and shrink to such a

degree that registration was only possible by hand.

Could some of the techniques that are being used in the "new" system be used in the "old" system?

For instance. If the images for the "bromides" were made with matrix film instead of paper prints, the image size would remain accurate. Would the amount of silver in the matrix be adequate?

Then, if the pigments were coated on a polyester sheet of film instead of paper, the image could be transferred in register and the size would not change.

Each color pigment could be hot watered independently and simply wait it's time to be transferred.

Then instead of using a temporary support paper, make the color transfer right on the final support material. Again, I would use a white polyester receiver sheet, using the same technique as in the "new" system.

The time saved would be considerable. The task of registration would be simple.

The most important thing, in my opinion, is the control of the print. It reverts back to the printer and his skill in producing separation negatives, and most important, the degree of skill in making "bromides."

The cost of screened separation negatives should be considered.

Making your own negatives requires the knowledge of a Dye Transfer technician. There would be no screen.

However, the degree of stability using the carbon color tissues compared to the new pigments developed by Charles Berger has not yet been determined. However, I am quite sure that Charles Berger's pigments have been thoroughly tested and that they will last much longer than the original Carbro pigments.

The time for serious thinking about the different color printing methods is here. The reemergence of the Carbro process has the color printing community thinking and talking about the archival properties of the color printing processes. I would like to set things into the proper perspective.

Apparently, we now have a choice. We can finally make prints that will practically last forever. This is a very important thing about which to be concerned

However there is more to it than just longevity. The making of a print is not a simple action but is instead, a very complicated affair.

Let us examine the whole

scope of photography. The first step is the capturing of an image on film. This alone can be a very difficult problem. Most unphotographic people think that all you have to do is aim and shoot and you are done.

If you are a scenic photographer, you will find that you must be quick, agile, have the eye of an eagle, the ability to compose in the viewfinder, be able to use your camera as if it were an extension of your mind and eyes and hands.

In other words, your camera becomes a part of you. It is a tool that requires much use and practice in order to become adept with it.

If you are a commercial illustrative photographer, working in a studio with props, sets, models, colored backgrounds, strobes, reflectors and things of that sort, you must still be agile, have an eagle eye, the ability to compose in the viewfinder, and most important, an **imagination** that can produce images that virtually "sing" when viewed by your client.

In this case, you are in total control of the image. You can light it, move it, distort it, add color to it, change it's mood simply by knowing what to do with your "tools."

If you are a wedding photographer, you must also be quick and agile, be able to compose in the viewfinder, and most important, be able to capture a "moment." This ability is also necessary when working as a photojournalist, a portrait photographer, a sports photographer, or any of the kinds of photography that need quick and accurate decisions

What about the color printer? Must the printer have the same skills of the photographer? The answer is no. **Not the same skills.**

However, the skills of the color printer are just as important as those of the photographer. Did you notice that I emphasized the word, "skills."

I am not talking about the "one hour lab" mentality. I am talking about real professional printing skills that take a generation to learn. To me, the ability of an Ed Evans (formerly of Evans Lab in N.Y.) or the skills of a seasoned professional Carbro printer such as Charlie Thill, (formerly of Nick Murray Studios, in N.Y.) is the essence of the **second half of the photographic process.**

Just what kind of skills are necessary for a person to be considered a seasoned professional?

There are many. The professional color printer must understand the densitometry and sensitometry of film and all of the materials used in producing a professional print.

The professional printer must also have the eyes and emotions of a painter or fine musician.

If you, the photographer make your own prints, then you will have only yourself to blame if the print fails to ignite some response from a viewing audience.

The color printers job is to get into the eyes and mind of the photographer and try to produce what the photographer saw and felt when producing the image on film.

Sometimes, this is not practical. There were many instances where our morning mail would consist of work to be done without the benefit of having the photographer present, so that we could discuss the effect that he was looking forward to receiving.

This happens too frequently in the advertising community. However, there is usually a long conversation with the art director of the ad agency so we can "see" things in the same way.

In other words, what I am saying is this.

The skills of a qualified and professional color printer are just as important as those of the photographer.

This is one of the reasons that so many "art" photographers are producing their own color prints. They shot the original scene, and therefore should know best what kind of effect they would like to convey.

Just what does it take in order to make a great print? If you are familiar with my video and book about Dye Transfer, then you know that it takes a lot of knowledge and experience. In short, "skill."

The latest color print process to be written about is the new version of the old Carbro process.

I have only seen one of the new prints. It was fantastic. It was certainly, one of the sharpest prints I have ever seen.

The old system of Carbro printing relied on the ability of the printer to adjust the contrast and color balance of the image.

This was done in many ways.

I used to make a set of out of balance masks in order to put an out of balance set of separation negatives back in balance again.

This was no simple matter.

The original negatives that we received from the client were almost never in balance and as a result we had to constantly correct them.

Almost all of the Carbro prints that we made during the '40's and '50's were made from separation negatives that were shot with "one shot cameras" or from negatives shot one at a time, through filters, in a conventional camera.

We did make prints from transparencies by making our own separation negatives, but found that the pigments of the Carbro process and the dyes of the transparency wouldn't match. We were unable to develop a technique that would enable us to get closer matches to the original transparency, so we gave up on this process for the new Dye Transfer process that had so much more control to offer.

The only thing that disturbs me with this new approach to Carbro, is that the control of the image is not up to the Carbro technician, but in the hands of the scanner operator.

I must also say this. The accuracy of the new scanners is incredible. Accurate renditions of the transparencies should really present

little problem.

Screened separation negatives are necessary because the pigments that are being used are opaque and cannot be laid over each other. This is essentially the same procedure as the lithographic process, except for the combining operation. The four separation negatives are made with a fine screen, so that the pigment dots will be in the proper place and not overlap and cause blocking.

A black printer is necessary. This does entail some modifications of the separation negatives. Undercolor removal being only one of the changes. However, the scanner will be able to accomplish this task with relative ease.

Once these negatives have been made, they will be in register.

The rest of the process is rather simple. It does, however, require absolute accuracy.

The separation negative is placed in tight contact with a specially prepared sheet of plastic, coated with the proper pigment color, and is exposed by a very brilliant pulsed xenon light source.

This exposure "hardens" the area on the surface of the pigment sheet. This sheet is then transferred to a white plastic receiver sheet.

Then a hot water rinse occurs, leaving only the color image on the receiver sheet.

This part of the process is similar to the system by 3M for producing "color keys." The 3M colored pigments are exposed in the same way, however, through the back, then "developed" and finally washed off with water.

This process is repeated with the rest of the pigments, until all of the images are transferred and completed. The result is a fantastic and very long lasting image.

What about the control of the Carbro by the printer? The control is mostly in the hands of the scanner operator..

The cost of a set of 16x20 separation negatives is quite high. The latest price for a 16x20 print was somewhere around \$2000. For this price, the print had better be good.

I have written about the longevity of the various processes.

I have not given the different print processes the thorough testing that Henry Wilhelm has done over the years, but from simple observation I have noticed the life of the different materials and their lasting power.

The Dye Transfer process is the only completely controllable process available today.

Contrast and color balance are easily achieved, and the skill of the printer is very important in producing a great print.

The Dye Transfer prints will last for many years without fading.

The matrices and separation negatives will last indefinitely. A new print could be made a thousand years from now and look as fresh as the first print. The only problem with this concept, is where are you going to find some one to make the transfer, as simple as it is?

Henry Wilhelm is a recognized expert when it comes to the business of longevity. He has made a career out of discovering the length of life for the various processes. He realizes the importance of the lasting print.

If a portrait of a Pope or a King is important enough, then by all means, use the longer lasting process.

I would like to see the difference between a Dye Transfer print and a Carbro print, of the same image and made to the same size.

More about flare.

I have discussed at length the problems with flare. This is a problem that has existed

in photography since the very beginning.

Any time a negative is placed into an enlarger, there is going to be flare. There is no way to get rid of it. It is the problem of the negative to positive process.

The dark areas of an image will be displayed as light areas in the negative. When this image is placed into the enlarger, the flare caused by the lighter areas will flare and cause "fogging." This is flare.

The diffusion enlarger is more guilty of this problem than the condenser enlarger, however neither enlarger can eliminate this effect.

If the negative were contact printed, the effect of flare is not present.

The main reason that Edward Weston made all of those contact prints from 8x10 original negatives wasn't because he couldn't afford an enlarger, but rather because he was a purist. He wanted nothing to interfere with his image on that original negative.

Dodge and burn? Sure he did, but not at the expense of flare.

I have made many Dye Transfer prints that caused me much concern.

I solved this flare problem in a different way. One of them is still fresh in my mind.

It began with an 8x10 transparency of the interior of a piano. The client wanted a 16x20 Dye Transfer print. The image was almost 95% black. The piano strings and little hammers were all that one could really see.

However, on close examination, the strings were perfect. They had color and great detail. The little hammers consisted of white material glued to wood. I knew from experience that if I tried to make a contact set of separation negatives and then proceed to make a Dye Transfer print, I would be shot down. I could almost hear the client saying, "Where is the detail, Pace?"

I immediately purchased a box of 16x20 size Kodak Separation #1 film and spent most of the day getting the separation negatives made by making them to the size of the print. I had to make them reversed.

Obtaining the correct exposure times and proper development times was an exercise I will never forget. I made the principal masks by contact, then made the enlarged separation negatives. The highlight masks were made to the size of the print on 16x20 Kodalith Pan film. The negatives were accurately made.

Then I used my 30x40 vacuum frame (equipped with flat Condit registration pins) and after first making many sets of black and white bromides to establish a balance I then exposed my matrices with the emulsion of the negative against the back of the matrix film, using a point light source up in the ceiling.

The image was needle sharp and exhibited **no flare**. The client was very happy with the result, and so was I. The flare factor didn't exist.

Making Black and White Prints that are unbelievable.

Have you ever made black and white prints for an exhibit and had trouble getting the result that you wished for?

Have you ever tried making black and white prints via the Dye Transfer process?

If you ever want the richest prints, with detail in the whites and blacks and get better results than you could ever get with standard "quality" black and white papers, then the Dye Transfer method is for you.

For this kind of operation, you will need a transfer area, 6 trays, a roller and squeegee, and the chemicals

normally associated with the Dye Transfer process.

It starts with your negative and your enlarger. The density range of the negative should fit the kind of enlarger you are planning to use.

If you use a cold light source, the negative density range should be around 1.7. If it is a conventional diffusion enlarger, try somewhere around 1.3. If you are using a condenser enlarger, try 1.0.

The differences in these density ranges can be modified by adjusting the difference between the A portion and the B portion of the tanning developer. The normal dilution of A and B is one part A to two parts B. Increasing the B will increase the contrast. Here is the formula for the tanning developer.

- The A portion**
- Elon.....16 grms.
 - Sod. Sulfite.....8 grms.
 - Pot. Bromide.....16 grms.
 - Pyro.....18 grms
 - Citric Acid..... 4 grms
 - Water to make 1 gallon

- The B portion**
- 1.95 lbs of Potassium Carbonate
 - Water to make 1 gallon.

After exposing the test matrices, processing them in the following manner.

Using one part A and 2 parts B develop for 2 1/2 minutes, stop bath for 45 seconds using 1% acetic acid, then and plain fixer until clear.

Hot water rinse, drying them, and dyeing them in Cyan dye, then transferring them, look at them through a red (29) filter to see which test looks as if it could be a black and white print.

When you are satisfied with the density and contrast of the image, proceed to make three identical matrices from the one separation negative.

Reduce the overall exposure by 15% for each exposure otherwise the three combined colors will print too dense.

When these mats are processed, and dried, place them in the Kodak cyan, magenta, and yellow dyes. These dyes are available from any Kodak dealer. The cost will be close to \$90 for a one gallon set. Many prints can be made from this one gallon set of dyes.

After a 10 minute dyeing time, transfer the images, in register, one at a time, giving them 5 to 10 minutes each to fully transfer.

The resultant black and white print can be modified and can be controlled to look like a cool or warm print.

The dyes can be altered in contrast in any direction, and the highlights can be lightened using highlight reducer (use 1 to 3 cc of the mixed solution. 1/4 tsp. to one liter of water.

The final print will have deeper blacks and crisper whites than any black and white print you have ever seen.

No, this process isn't cheap. But we are talking about quality, not price.

Speaking about quality.

What can you do when you are confronted with the possibility of printing from a transparency of a person wearing a black hat, black shirt, and black pants, photographed against a white-washed brick wall?

The first thing to consider is what kind of process we are going to use in making this print?

Let us choose the Dye Transfer process.

Make a normal set of negatives, using all of the masking controls that are listed in my book.

Then make a Kodalith of the transparency.

The kodalith will be black everywhere except where the transparency is black.

Combine the transparency with the Kodalith and all you will be able to see are the shadow areas of the transparency.

Now, make an exposure by contact, of the combination, using Pan Masking film. The exposure should be as long as the initial exposure used in making the principal masks.

The developing time should be in the 25% range.

The result should be of a negative of the shadow area's.

Add this new **shadow mask** to each of the separation negatives when making the matrices.

This will immediately open up the shadows.

The fact that the mask is a negative, will increase the detail of the dark areas without losing the very deep blacks.

If necessary, bleach out areas that do not need any correction.

I have used this technique for years. I have called it my "sudden black" mask.

This should only be used on an area which has a black image with strong tight edges.

Obvioulsy, variations of this kind of mask is quite often used.

But, what about making a Cibachrome print?

What can you do to improve the shadow detail of the same transparency without screwing up the rest of the print?

Use the same Kodalith mask, but this time, first make your "normal" exposure, then add the Kodalith to the transparency and give the Ciba print an additional exposure. How much? who knows. Test it for yourself and find out.

Obviously, registration equipment is necessary for this kind of activity.

The activity of color labs has changed. It has become a scramble for some of the finest labs.

The labs that were making the top quality prints for the past 40 years have had a rough time lately, because of the use of the new scanners and digitized work stations that have cropped up.

Advertising agencies are happy with the fact that they can prepare an ad rather quickly and not go through the painful waiting time it takes for advertising to become a reality.

Where does this leave these magnificent labs? They are being forced to

shift gears and to begin to compete with the labs that have concentrated on working with point of purchase advertising, portraits, photo-comps, backlit transparencies, wedding and pure amateur photography.

I know this rubs them the wrong way. I was in the higher echelon field of color printing all of my life. If I were still in the business of making prints for others, I would probably do what CVI has done in New York City.

They opened a lab making Dye Transfer prints for the "art" community. Period. No advertising agencies or any other related group will be tolerated by them. They only cater to the serious art photographer.

This great lab used to be associated with the Frank Tartaro lab in N.Y. When they left Frank and went on their own, they aimed at the community that would always be alive and a market that was a reality.

Every lab that is in trouble right now because of the scanner invasion, must diversify and change market places. Choose one or more. There is still plenty of room in the business for true professionals to engage in their work.

I was never very good at determining market places. Many times I was advised by different photographic salesmen to install a Type C system that could turn out many hundreds of prints per hour. I said; "No way. I am a professional".

What a mistake that was.

Now for some news.

My new book on Cibachrome printing is finished and available.

The book consists of actual Cibachrome prints in the book showing the before and after masking effects. I was honored by 4 great photographers that allowed me to use their images in this venture.

Tom Kelley, Galen Rowell, Vern Clevenger and Keith Logan.

The book, which is virtually hand made, will sell for \$135 plus \$6 shipping.

It is titled "A Professional Approach to Cibachrome"

I am still stocked with the Video and Book package for \$200 plus \$12 shipping, and the book "The Art of Photo Composition", for \$50 plus \$3 shipping.

Thanks for your support.

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