

# KEEPING PACE

A Monthly Newsletter Devoted to the art of Darkroom Photography

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## Using Your Old Negatives Again and Again

**I have been getting many phone calls concerning the demise of the Pan Matrix film, how to circumvent this problem and also calls about different approaches to the UltraS-table process.**

Last year, Kodak issued an article that was originally written by Tom Rankin of Frog Prince Labs in San Francisco, and finally edited and re-written by Ctien of Daly City, Ca., describing an approach to making Dye Transfer prints from color negatives.

Ctein meticulously explained the method of first making a set of 3 color separated positives, using Technical Pan film. Then he outlined the procedure for making the separation negatives from the positives, using almost any film that has the capability of

holding the contrast range. My first reaction to this article was that this was an unnecessary approach because the matter of color correction, highlight restoration and absolute contrast control could better be served if the separation negatives were made from a transparency.

I still think I am right.

If the color negative is printed on Kodak's Vericolor print film, and turned into a transparency, the visual opportunity to color balance the image and to do any dodging and burning is a simple matter to handle. If the transparency image is made large enough, the fact that there is grain in the print film will not be a factor in the quality of the print.

Once the image is visible as a transparency, producing

the contrast range that is required to make a good set of matrices is an easy task. When looking at a set of black and white separation negatives made from a color negative it is almost impossible to judge the color balance, or whether or not the contrast balance is adequate.

If you have been used to working from color negatives and are finally forced to make any kind of a print from black and white separation negatives, I would prefer to make the negatives via the conventional system of making negatives from a transparency.

The chance, and choice, to increase the highlight separation as well as the specular highlights is very important. These steps can affect the overall quality of the finished print. The opportunity to be as creative as

possible is easier when working from a transparency.

Color correction is also possible when working from a transparency, because you can immediately see the areas that need correction, especially if my "Isolation Masking" procedure is followed.

**Another advantage is this.** If you are working from a small original negative, either 35mm or 120 film size, you will be able to place the negative in an "oil Immersion" carrier and produce absolutely spotless, scratch free, and refraction free, print films.

If you think I am exaggerating about this oil method, just make the best possible C print from the negative of your choice, using either a glassless carrier or a glass carrier, then make the best Vericolor print film from the same image, in an oil immersion system and compare them. The difference will astound you.

Remember, the quality of the photo is in the negative and not the type C paper.

I earlier explained that one of my subscribers is planning to make a good C print from a 35mm negative, then scan this print and produce a set of color corrected-continuous tone or screened separation negatives, with which he can make a Dye Transfer print, or an Ultra

Stable print. The quality of the less expensive scanners is beginning to approach the more sophisticated scanners that cost much more.

Indeed, the rapid changes in the computer field will undoubtedly produce an inexpensive retouching system such as the best ones available today, like the Crosfield, or Kodak's Premier system.

If you want to pursue this attempt even further, have a litho company make a set of continuous tone separation negatives from your 35 mm color negative, to the size of your print.

The quality of the print, when the matrices are made by contact, will be far superior to making the matrices by enlargement.

If you use the "bromide" method that I have described in my book, you will be able to produce an accurate balance and use these newly acquired exposure times to make a good set of matrices. If you have creative skills, you will be given the chance to make prints that are worthy of the time it takes to make one.

But for those of us that like to make life difficult, and do want to pursue the method of making black and white separation negatives from a color negative, here is my

suggestions for producing them.

As you must be aware by now, I believe in getting as close to the required density range in the masked transparency as possible.

However, we are not working from a transparency, but instead, a color negative. This means that tests must be made to determine the density range of the positives before you make the final negatives, and what the range should be for my own equipment and many other variables.

I would suggest that you make tests on your matrix film with your own enlarger to find your own required density range.

Here is how that step is accomplished.

Using a 21 step grey scale, make a set of varying exposures on a sheet of matrix film, process it normally in Kodak's tanning developer, then, after drying, dye the matrix in Cyan dye and transfer it.

Examine the dyed print with a red (29) filter and find the one grey scale that seems to be exposed in such a way that equal amounts of the top and bottom of the scale are equally distributed.

Then look very closely and find the upper and lower steps that begin to exhibit some detail. Mark these steps and then remove the original grey scale from the enlarger and make density

readings with a densitometer. Subtract the lower reading from the higher reading and the result is the density range. This range is all yours. Few others will have a density range requirement exactly like yours.

In order to make a set of negatives that reflects this range, you must first work from a color negative of a 3 step grey scale.

Use a Q-6C grey scale from Kodak, make a set of exposures by contact, onto a sheet of color internegative film. Use the new negative. Make a series of positive exposures through a red (29) filter using Kodak's Separation # 2 film. Make identical exposures on two sheets of film. The point here is to process these two sheets of film for different times. This film is ideal for such a project as the ideal contrast of the film is easily reached. I suggest trying to reach the gamma 1.00.

For this project, I recommend using developing times such as 2:30 min and 5:00 minutes using HC-110 developer in a mixture of 30 cc per liter.

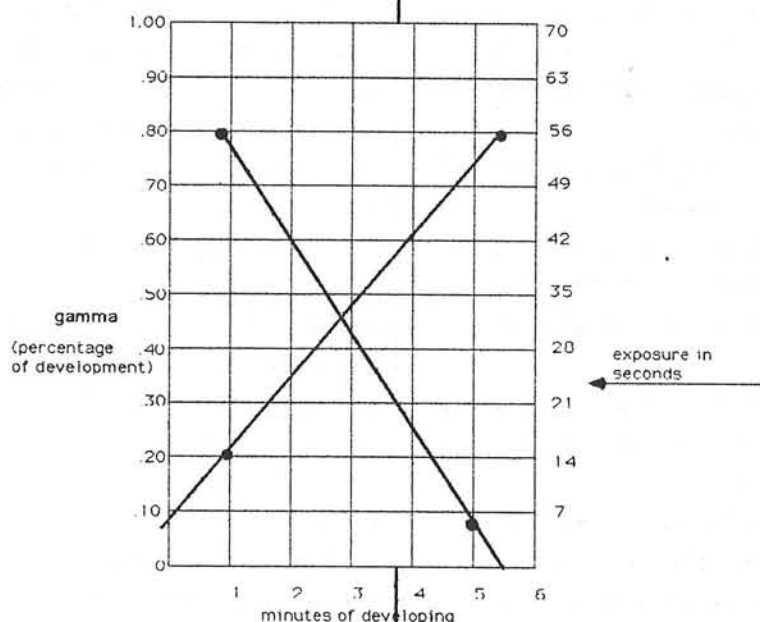
After processing, examine the two films and try to find a density in the lightest step that reads close to .40. When found, mark these steps.

Using these two marked scales proceed to measure their density ranges. Deter-

mine their density ranges, and mark them.

You now have two scales with different exposure times for a specific developing times, and different gamma's for the different developing times.

Make a chart as shown and place dots where the developing times and the gamma's and exposure times meet.



well. The green (61) and the blue (47b).

This chart will allow you to make accurately exposed and processed positive separations.

Before breaking down the set up that produced all of this work, you must have a repeatable light level. Read the level of the lightest step of the projected grey

In order to use the chart properly, find the required gamma on the left side of the chart, look to the right until it intersects the developing line, then look down to the bottom of the chart to find the time of development. Then, while on the development time, look up until you intersect the exposure line, then look to the right to find the correct exposure. You must do this procedure for the other two filters as

scale and mark it.

This will be the number you aim for when projecting the image on the easel, prior to making a set of positives. This is known as an **Aim Point**.

If you are in doubt about your accuracy, make a strip test exposure and examine the positive after processing. It should look like a well exposed positive print. The next step is quite

simple.

The making of the final separation negatives. The film that I recommend is Kodak's Separation #2, or **better yet, the film that scanner operators use.**

This film is orthochromatic and can be handled with a safelight.

Getting the range to match your requirement is a simple step.

Make a series of exposures again, from the grey scale produced from the color negative, on two sheets of film, using only a white light contact system.

Using the same procedure, establish the contrast and exposure times on a simple chart.

Once these two chores have been completed, here is how the system works.

Place a color negative in your enlarger. Read the highlight area and stop down the lens until it matches the **aim point** readings.

Then proceed to make a set of exposures according to your chart. The results should be fairly close, except for one thing. How accurate is the color negative?

If a transparency is off color, you can see it. But if it is off, you won't know it until it is too late.

Here is the simple remedy for this portion of the process.

I hope you have some method of making a quick C

print. A small rotary processor such as a Jobo, will do fine.

Make a print of your grey scale. Make sure it is as neutral as possible. When this is done, **mark the filter pack and the exposure time.**

In the future, when you are ready to make a set of positives, first make a print. If the color balance is the same as the color test, then proceed to make the positives. If it is different, make changes in the exposures that reflect the changes. For instance, if a ten magenta was added to the original pack, add .10 in logarithm to the exposure through the green filter. This will keep the color balance of the negative where it belongs.

**I think you can see why I prefer to make my negatives from a color transparency.**

The amount of time it will take to make a set of negatives with the system promoted by Kodak will be long, and may also include some surprises. Working from a transparency won't produce any surprises.

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The calls that I have received from subscribers have primarily been about working from one own negatives that were formerly used to make Dye Transfer prints. Most wanted to know what procedures could be used to

make the final screened negatives, in order to make the exposures onto the pigment sheets.

Here is my recommendation: Use your enlarger and make a set of positives on a Kodak's commercial film 4127, or Kodak's Separation Negative film # 2. These films are not easily handled by tray development, but if you are careful, it will work. Use your eyes and sensitivity in order to make a color balanced set. This will require you to have a rather large light box, preferably hanging on the wall over the sink, so that you can monitor the results of your exposures and processing. One the set of positives are made to your satisfaction, you can then make a set of screened negatives through a set of pre-angled screens, by contact.

The results will depend on your ability to make these positives to the correct range before you make the final negatives.

When making the negatives, you may have to flash the negatives without the positive image in place but with a severely lowered light level. This is a testing procedure that will be necessary in order to find the proper range on your screened negated.

This is not a simple system, but with some perseverance, can work well. The idea behind this approach is so

that old negatives that once produced beautiful Dye Transfer prints could also be used to make prints via the UltraStable process.

Charles Berger has suggested that the positives be screened, using a litho film. Then simply contact expose these screened positives to obtain a set of screened negatives.

The theory behind his approach is that you will produce a harder dot and therefore get a crisper image.

### **The question of producing a black printer.**

If all you have are the three separation negatives, simply make a positive black printer by making a 35% exposure from each image onto one sheet of film. This will allow some of the colors in the deeper areas to be held, rather than be lost in the black printer.

Using a 35% exposure will make for a slightly cleaner image. Keep the contrast level the same as the rest of the films in the set.

You can make the black as a continuous tone positive or a screened positive. It depends on which method you plan to use.

You will also have the chance to do some very interesting color correction by dot etching. Dot etching is simply a method of color correction by bleaching. If you bleach the positive, you will produce a lighter color. If

you bleach the negative, you will produce a darker color. This method was used for the past 60 or 70 years by all of the litho companies in the world.

Dot etchers were among the highest paid technicians in the world of color lithography.

What will you need to make these larger images?

The first piece of equipment is an enlarger. It must have a registering carrier and a vacuum registered easel.

A register punch for both the carrier films and the easel films. Condit Mfg makes both of these.

Kodak and other manufacturers make and sell screens, either positive or negative, up to 300 lines per inch. This will require very clean handling. I suggest that white gloves be used whenever screens are used.

The lens must be a quality lens, however, an apochromatic lens is not a necessity as the black and white negatives will produce no color aberration.

The sink must be big enough to hold three trays. Four trays would be better, but three will suffice.

Again, a large light box over the sink, so that the films can be examined properly. Rather than squeegeeing the films, use photo flow and let them dry naturally.

The enlarger can be used as the light source to make the

screened contact images. Make sure that it is sharp and clean.

A point light source placed high up near the ceiling would be the best method for producing needle sharp dots

When making the UltraStable pigment exposures, you will need an ultraviolet light source like those used by litho plate makers.

These are available in used form in every major city in the world. You can easily find bargains.

Working room is the only problem. However, I have made many prints in my teaching darkroom which measured only 12 x 18 feet. My equipment included an 8x10 and a 4x5 enlarger plus a 10 ft. long sink and plenty of work space, and light boxes.

Before you do anything this important, measure your space and make a layout of the area.

If you need help in this department, call on me.

Using your own screened negatives will be obvious. When you make a print from your own negatives, you will have the satisfaction of producing the entire work, and not having to rely on any outside source to help you with your printing skills. The choice is up to you. If you feel you are capable of

making your own negatives, then do it.

We have been looking at photographic prints since the beginning of the photographic process, and have become accustomed to it.

**But I must admit**, when a set of scanned negatives are examined and you see the details in the shadows and the tiny details in the whites, and you recognize the fact that you probably would have lost them using the conventional systems, you begin to wonder if you are doing yourself and your clients a disservice.

The only way to prove to yourself, which method is the best way for you, make some tests.

For the past few months I have been engaged in producing direct screened separation negatives from transparencies for publication in a rather cheaply printed weekly TV magazine.

My work is not to be considered critical, but, I have discovered a few things that were unknown to me a few months ago.

My method for producing these separation negatives and the subsequent color key proof, is as follows. I begin by examining the transparency. If I feel that the contrast is too high and

that there is too much important detail in the shadow half of the image, I pre-mask the transparency. I usually choose a specific gamma for the masks, between 10% and 35%. I use my judgment.

I use Kodak's Pan Masking film and a contact platen.

The masks are exposed through the Red 29, Green 61, and occasionally, with the split filters, the blue 47b. I process the films in a tray, emulsion down. To eliminate any annoying scratches from appearing, I process the films using a floating method which tends to keep the films emulsion from touching the bottom of the tray. After fixing and washing the films, using the same floating technique, I soak them in a dilute solution of Photo Flow, hang them from the same corner and dry them gently in warm moving air.

The masks are registered with the transparency and projected to size on the vacuum easel.

Finding the correct exposure for the initial Cyan negative is critical.

By making tests using a three step grey scale, I was able to establish the exposure times for each of the filters.

Using only white light, I read the lightest step on the easel and recorded it.

I tried a few tricks, such as making a Cyan negative by

trial and error, and when I thought I had a good one, I actually made a cyan color key, using the 3M color key system. I would examine the image and the transparency together, through a red 29 filter. If they looked right, I would proceed.

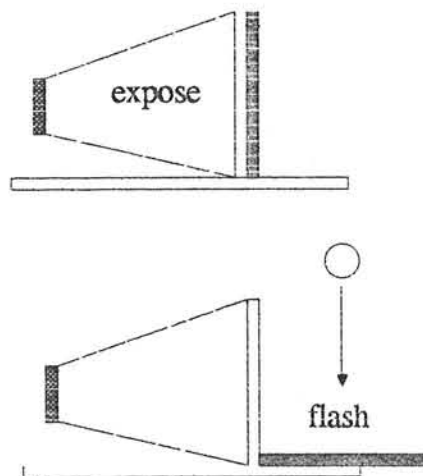
I then tried something I have used for over 40 years. I made a rectangular cut out of a sheet of black opaque film, taped it to the 85 line screen used for the Cyan printer, and by placing a sheet of white paper on the easel, position the screen, with the cut out rectangle over the important part of the image and then by moving a sheet of unexposed film under the screen, I could obtain many different bracketted exposures of the screened image, so that something accurate would eventually result. Even though I used a meter to pinpoint an area, this was an even further tightening of the exposure level accuracy. I can easily examine the image on a light box and from experience, pick out the correct image.

All I had to do now was to use my calculator and determine the correct exposure for the rest of the filters based on what I had achieved with the test.

The only thing to now consider was the amount of flashing I would need and how to do it.

Flashing is a necessary evil because there is little or no contrast control with litho films as there is when making a continuous tone image.

Flashing the image is accomplished in a graphic arts camera by first shooting the image, then opening the door with the film **still intact and in register** with the screen, and then flashing a small amount of white light exposure to the sandwich.



This flashing action will add density to the lower portions of the scale and produce less contrast.

Is this an accurate method for producing quality work? I don't think so, but it does seem to work.

The amount of normal exposure to the litho film has no bearing on the amount of flash required. The two items are independent of each other. But, how can you flash using an enlarger for

screened images? Here is how:

First establish the correct exposure for the proper density of the cyan image. Then remove the carrier from the enlarger, replace the separation filter with a neutral density filter, (about 2.60) and make a series of strip exposures across the already exposed cyan image.

Your eye will tell you which exposure is accurate.

At this point, read the reduced white light area on the easel and record it.

In the future, regardless of the lens opening required to make the screened images, simply read the white area on the easel, through the neutral density filter, and recalculate the new flash exposure using the log scale on your TI-30 calculator. It works, believe me.

Some of the images that I have produced with this relatively simple and inexpensive method have turned out great. However, I doubt if the quality of these negatives could be used to make UltrStable prints.

I recently was in contact with Ctein, the writer of many articles for many of the leading photographic magazines, such as Darkroom Techniques, and others. I mentioned Ctein at the very beginning of this newsletter. As you may know, he has been in the forefront of the

system of producing Dye Transfer prints from color negatives for many years. He has informed me that he has a freezer full of Pan Matrix Film and is ready to make top quality Dye Transfer prints for anyone who needs them.

If any of you are interested in getting fine prints from your color negatives, and have the prints made by a fine color printer, contact him as follows:

**Ctein**  
**42 Skyline Rd.**  
**Daly City, CA 94015**  
**415-756-5557**

Some callers have asked about the differences between Charles Bergers new UltraStable process and the older Carbro process. **The differences are many.** In the first place, the original pigments were manufactured by two sources. In England, the Autotype Tri-Color Company made colored tissues that had very accurate and clean colors, but were never balanced properly.

In America, the McGraw Colorgraph Co. a subsidiary of Carnation Milk Co. produced the pigments with very accurate balancing, but the colors were not as clean and pure as the Tri-Color tissues. The Pigments were simply coated on paper. No sensitization, as yet.

Sensitization was to occur during the actual wetting part of the process. The process was a bit tricky because each step was fraught with trouble. Sensitization was performed by soaking the pigments in a tray of solution consisting of Pottasium Dichromate and water. The pigment was now sensitive to silver. When the wet paper silver print was combined with the wet sensitized pigment, the areas touched by the silver would actually harden. After peeling away the silver paper print, this hardened image would be transferred to a sheet of waxed celluloid. After a short time, the entire sandwich would be placed into a tray of hot water. A short while later the pigment would begin to melt, and the edges of the paper would ooze color. If the entire sheet were moved laterally, the paper would lift off on one edge and could eventually be peel off. The image was washed continuously until a complete image was formed on the sheet of celluloid. There was no screen, but just a clean continuous tone image. The chemistry was toxic and quite dangerous. The skin would absorb the chemistry. Rubber gloves should have been used, but most of us didn't realize how dangerous it was and ignored the problem.

Charles Berger's pigments are pre-sensitized and are not toxic, nor do they lose their sensitivity with time and are far more stable than anything known. The best feature of Charles' system is the fact that each color image is transferred to the final sheet of white polyester and needs no further handling. The entire procedure is pre-registered so that the image needs no further thought. I have said in the past that I was used to working with a roller and would probably like to work in this fashion, but Charles said that the squeegee system is probably better. After talking to Joe Holmes. I am convinced that Charles was right. The two surfaces, the pigment and the receiver sheet, are so sticky to each other that the squeegee would actually do a better job. However, I had little trouble with my rolling the image down. Large prints could be troublesome when handled with a squeegee, But Joe Holmes informed that a squeegee system used in the Silk Screen industry could be purchased that would be able to transfer a pigment sheet to a receiver sheet in a 26 x 32 inch size with complete accuracy. The system includes a set of ball bearings that are supported independently and the

squeegee lays flat over the image area and allows pressure to be brought to bear on the combining of the image and the receiver sheet. Small prints, up to 20x24 can be handled by hand quite easily. If scanned separations are made, and you would like to see a proof before you go too far, for a small fee, a smaller set of screened negatives can be produced, and a 3M color key can be made in minutes. If you want to get a better color key, squirt some film cleaner between the four color sheets. The image will look cleaner and give you a better glimpse of what the final image will look like.

I will try to keep up with updated information about this new and fascinating method for making high quality and very long lasting color prints.

In the meantime, the Dye Transfer field is increasing, as is the Cibachrome field. My video's and book's on the two subjects have been selling to interested aficionados all over the world. If you are interested in any of my wares. let me know.

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**2823 Amaryllis Court**  
**Green Valley NV 89014**

Thanks.