

# KEEPING PACE

A monthly newsletter devoted to the art of darkroom photography

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## REGULAR MATRIX FILM VERSUS PAN MATRIX FILM

### The pro's and con's of making dye transfer prints from transparencies or color negatives.

The advantages, as far as actually and physically working with all of the complex steps involved in producing a quality Dye Transfer color print, are in favor of making the print using Pan Matrix material and producing a set of matrices directly from the color negative. This is the easiest way to get involved in the dye transfer field, without the tedious labor and necessity of plotting curves and making special highlight masks and complicated principal masks. On the other hand, there

is so much more control available to the technician that has mastered the complex masking steps and knows how to increase the color saturation and actual structure of the curve shape so that the contrast and color control is almost unending. However, this complex group of steps is not without its hazards. These steps are like a chain. Make one mistake in judgement anywhere in the process and the entire print is affected by the error. The best way to describe the differences is to place them side by side and make comparison. That is hard to do with this kind of publication, but let us list them.

The simple fact that registration equipment is expensive could be one reason for using the color negative system. The film comes pre-punched and only requires a good vacuum easel and a good transfer board. Both of these items could be made by a person with average skills. If the enlarger is made so that it doesn't move and you are able to place your separation filters in the path of light before the negative, and you are able to construct a simple vacuum easel, with register pins that can be purchased almost anywhere, and then a sheet of glass or granite with the same kind of pins cemented to it, you will have all

that is absolutely necessary to make a dye transfer print from a color negative. However, if you are working from a transparency, it becomes a bit more expensive. You must have a film punch and an exposing system that is fast, even and repeatable. The contact frame or vacuum platen or any other device must be made with much accuracy. The glass used in the contact system must have registration pins inserted into the surface. The pins must match the film punch within thousandths of an inch otherwise registration will be affected. The carrier in your enlarger must be a registration carrier. You should be able to insert and remove the carrier, at will, and still be in the same position. The same kind of registration pins must also be inserted into the glass and be very accurately placed. The enlarger must also be able to be locked in position and the matrix punch must match the registration pins on the

easel and the transfer board. If you plan to work from small originals, then there is even more expense. The enlarger should be a quality system with smaller registration film punches, carriers and easels. And don't forget vacuum. You may also want to use an **oil carrier** in conjunction with a point light source, so that large negatives can be made from small originals. **The list could go on and on.** The main thing here is that much more equipment is necessary when working from transparencies. The methods for producing the print is the real reason for this article. I will try to as objective as I possibly can. I have made many thousands of prints using both techniques. For instance, if you had in your possession, the same image shot on a 4x5 transparency, and a 4x5 color negative, of a scene of a wooded area, with all of its dark areas and light tree bark and subtle detail, and you went through the effort and made a dye transfer from each

original, what would be the advantages and disadvantages of each system?  
**Again, lets list them and examine the differences.**

If your negative was properly exposed and all of the details were in order, then a simple set of exposures would give you the same relative look that you would get from a type C print. When the matrices are processed you will have the opportunity to adjust their contrast by varying the proportion of the A to B developer solutions. The big difference, however, is that the dyes would also make the print look much richer and sharper. At this point you could adjust the contrast of the dyes and the overall color balance with the use of chemicals in the first rinse. You could also stage (paint the matrix) and adjust the color of any one area in the print. You could even double transfer the matrices for a special effect.

In other words, the final stages in producing a color print, whether by direct exposures from a negative or from a transparency with its subsequent separation negatives, is about the same. The post matrix controls are equal in control ability.

**The chore of making separation negatives is, by far, the more challenging of the two systems.**

The principal masks are made to reduce the overall contrast of the transparency so that it fits the range necessary for producing the separation negatives. This is one step that normally doesn't have to be considered when working from color negatives. This is a very important step. Not only are you able to control the contrast of the original transparency, but also the color saturation and brightness of the final print by choosing the proper filter or combination of filters to expose the masks. This is not usually

possible with the pan matrix system. You could go through the trouble of making separation positives and combining the various positives with the color negative and exposing through filters in order to make some kind of mask that might work, but if you have to go through that much effort, why bother?

Various parts of the transparency are able to be controlled and enhanced with the use of special masks and "tricks of the trade".

**Let's consider the highlight area.** This area is usually affected because of the low contrast in that area of the matrix film. The fact that a principal mask is made, even further complicates matters. This is one argument that most Pan Matrix users would win. The highlight area is reproduced better with the color negative system than with the separation system. However, the separation system includes a method for restoring the "lost"

highlights and, in fact, makes it easier to accentuate the highlights as much as you want to. You have the **control**.

The word that I use when describing the real difference between the two systems is **control**.

Negative contrast is the next step to consider. What kind of contrast is required in your color negative or set of separation negatives, in order to make a quality Dye Transfer print. This depends on your enlarger. When color negatives are shot, the negative contrast is built into the system by the manufacturer. Color negative film is well made and its contrast usually falls within the limits of the matrix film. Adjustments may have to be made in order to achieve the "look" that you want, but the adjustments are simple and available. On the other hand, **the contrast that your enlarger will produce, using regular Matrix film, can easily be predetermined.**

This means that you will be able to make your separation negatives to the proper contrast, and eventually, the matrices, without resorting to very many adjustments. This is done every day by professional labs throughout the country. The main difference that I have witnessed is this:

**The transparency has a much greater range than the color negative.** Also, the colors are evident and you can see the "print" in your minds eye. The first stage in making a print is to evaluate the transparency. Is it too light or too dark, and does it have the proper mood or color balance? These decisions will affect your judgement and help direct your efforts to making the kind of print that you want. You may decide on a specific masking approach in order to open up any particular color, or you may decide to open a shadow by increasing the contrast of the principal mask.

In otherwords, there are choices to be made. Working from a color negative does not allow that much fine tuning.

**What about sharpness?**

It has been alleged that working from a color negative is direct, and therefore, the sharpest way to make a Dye Transfer. This may be so. All I know is, that when I use a **point light source** to make my contact separation negatives, the materials are emulsion to emulsion. I don't know how anything can be sharper. The Super XX negative that I use is grainier than the color negative film, but I have recently switched to T-Max film and the grain is extremely fine.

The real test, however, is when you are working from a small original. Let us examine some of the testing that I have worked on. The details and grain of Kodachrome is legend. I don't believe there is anything in color film that is sharper. The colors are richer and brighter than the dyes

used in manufacturing color negative film.

**The biggest difference, however, is in the way you use the small originals.**

If you plan to make a 20x24 dye transfer print directly from a 35mm color negative, a certain amount of sharpness will be lost. The reasons for this occurring are the degrees of definition in the original and the flare produced by such a large blowup. On the other hand, **if you use a point source and an oil carrier and make 8x10 separation negatives from a transparency,** the detail in the original transparency won't be subjected to as much flare, and the grain of the original transparency will be the only grain that you will see.

On one hand you will be enlarging the color negative 20 times, and with the enlarged separation negative, only 2 1/2 times. This does make a difference. So where does that leave us? Right back to square one. It all



depends on just what "kind" of print you plan to make. If you are in the portrait field, or making scenics, by all means use the color negative approach. You will get far superior results using pan matrix, rather than Type C.

If you plan to work with advertising agencies and are willing to face the art directors with their demands for wild changes and special effects, then I would suggest the separation negative approach. The fact that I have been a student of masking for all these years has tainted my choice in favor of working from separation negatives. **However, I know a few printers who work from color negatives only, and produce marvelous work.**

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Another approach to making Dye Transfer prints from color negatives is as follows: Using separation filters F 29, N 61, and the 47b, it is possible to make

separation positives on almost any kind of panchromatic black and white film. I have used film such as Separation 2, which is a much contrastier film than most. It works well if a grey scale were included in the original color negative. Making the positives is rather complicated, since you must match the grey scales in both slope and exposure. This isn't as easy as it sounds. However, once a good set is made, one can use the accumulated information in order to make a new set of positives from a new color negative and come fairly close.

**The procedure is to first make a set of positives, and then secondly, make a set of negatives from the positives.** This last set of separations are then used with normal matrix film to produce the image. What is the purpose of going through all of these steps? Color correction and contrast control. There are many areas that will enable one to make masks to

improve color saturation of to desaturate a too bright color. Highlight masks can be made to increase brightness and detail in the highlight area. This technique was once used by Ed Evans, when he was making dupe transparencies that looked as good as, or better than, the originals. The best part of this procedure was that he was making an **archival system** in order to make sure that the original transparency could be remade well into the future.

I would hesitate before I would attempt this last procedure. The results must be worth the effort, otherwise time will be spent in utter frustration. Tom Rankin, of Frog Prince, in San Francisco, recently made some prints for Kodak, in which he used a similar method. Perhaps he will divulge some of his secrets in time for the next newsletter. Tom is using T-Max film for his normal separations and is turning out brilliant

Dye Transfer prints.

### Paper for sale.

In 1984, Kodak made a run of single weight dye transfer paper. They recently discovered that they still had some in their warehouse and are offering it for sale to the public. If you have never tried this paper, you have a treat in store. The emulsion is just as thick and receptive as the normal double weight paper, but instead is on a thin backing. This paper was used primarily by Dye Transfer labs that catered to the advertising agencies. These thin prints were able to be cut out and sanded thin, then pasted over an existing image. It made for really simple strip-ins. If you are interested, orders can be placed through any Kodak dealer.

**The sheet paper is 20x24 , 250 sheets. It is known as Kind 1319 and the catalogue number is 176 7441.**

**The minimum order is two boxes.**

The roll paper is as follows:

**40" x 30ft.**

**Catalogue number is 145 5492**

**40" x 100 ft.,**

**Catalogue number is 188 3883.**

Price will have to come from the dealer.

**An idea** has occurred to me for the construction of a simple, but effective, registration carrier.

The best way to repeat a position of a carrier is by fitting the housing shape accurately. This can be done with springs that would push the carrier into a corner or against a side, or even with a three point balance and locking system as devised by Condit Mfg. I don't know if anyone has ever considered **magnetism**.

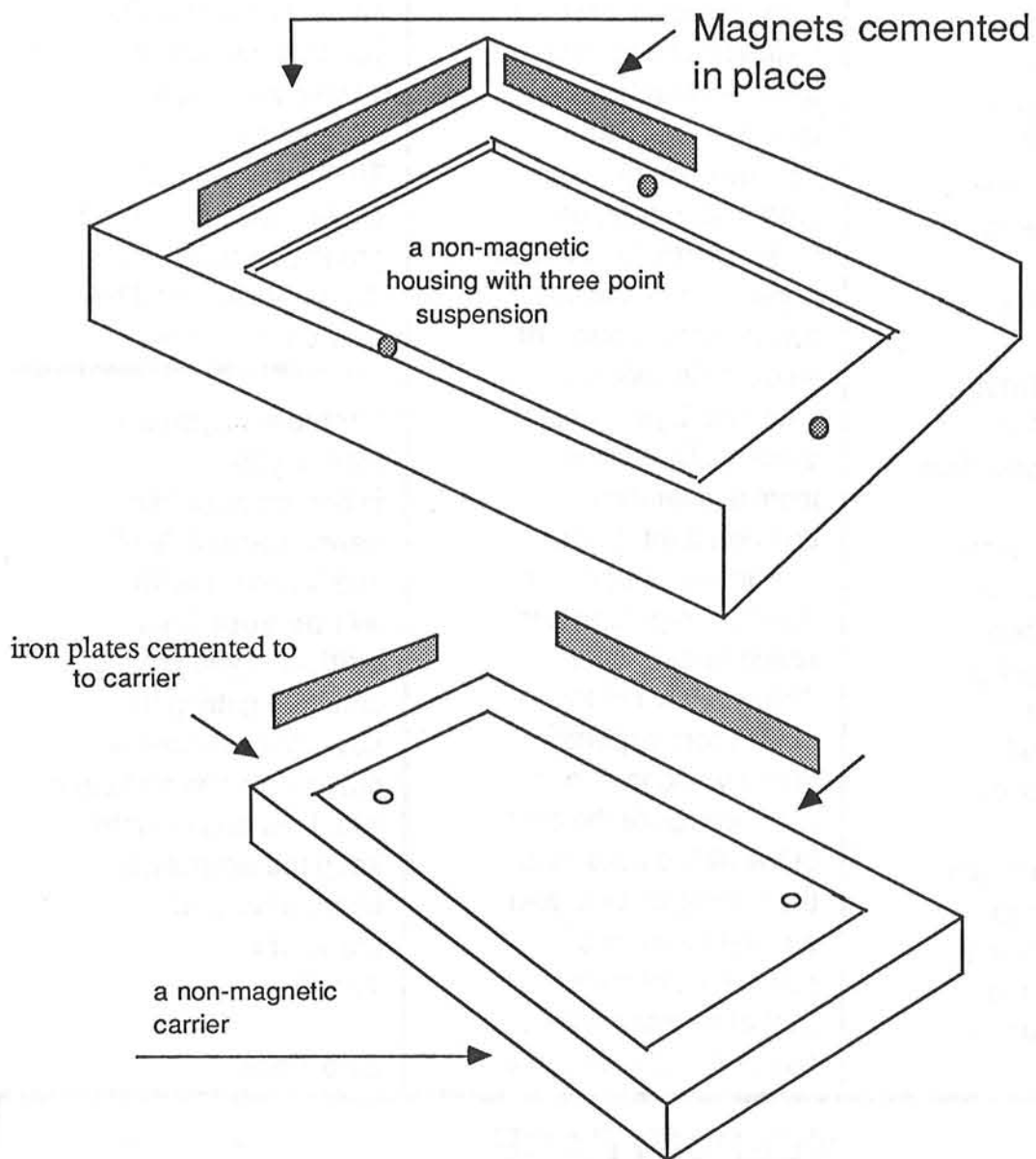
This device is just one of many ideas that I have either thought of or have been told about by some of my friends in the darkrooms.

**Bob DeSantis of Desantis and Associates in North Hollywood** suggested that besides the magnetic system described on the next page, that a series of magnets be used. Some attracting and some opposing. This would force the carrier into the same position all the time.

Some of the equipment that Bob DeSantis has made during his career as a Dye Transfer specialist has been of his own design. The ingenuity required for such ability is the **need**. Most of us who have butterfingers, would love to be able to "invent" some system that would work. Unfortunately, most of us have to depend on the professional machinists to design and make most of our registration equipment.

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The following illustration will explain my idea better than words.



By using non-magnetic metal or wood to construct the housing and the carrier, you can then use magnets on the outside area of the carrier, and iron plates on the same corresponding corners of the housing.

By using pins, permanently cemented into the bottom glass of the enlarger, you will have a registration system that will work and won't cost too much. The professional systems built by people like Condit are superior, but if you have a financial crunch, here is one way to get started.

If any of you have discovered a simpler solution and don't mind sharing it with the rest of us, let me know about it.

This page will be devoted to some advertising for Pace Color Workshops. As you must know by now, I teach three basic courses here in Victorville, CA. The courses include, **Cibachrome printing, The Dye Transfer print process, and The art of Photo Composition.** These courses are based on well over 45 years of experience in dealing with the toughest clients in the world, **the art directors of advertising agencies.** I have been fortunate enough to have students come to me from all over the country. **However**

some students asked if I would travel to their area and teach them in their own lab, with their own set of problems, water, and temperature. My answer is yes. In fact, I have travelled to a couple of students in order to teach the Dye Transfer process. By visiting them in their own environment, I was able to see things that could be improved and space re-arranged. This is really not too much more expensive than if you came to me. If you compute the cost of the airline ticket and the renting of a car and a motel room, and compare it with the cost of my visiting you, the amount is about the

same. I charge \$700 if you visit me, and \$1500 if I visit you. (plus expenses). Think about it. I can explain my system to a group of employees at the same time and be very cost effective.

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For those of you who started your subscription to this newsletter in July of 1987, **next month will be your final edition.** If you wish to continue getting the newsletter, please fill out the coupon and send it in. I will endeavor to keep the newsletter informative and thoughtful.

**Thanks,**  
**Bob Pace**

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