KEEPING PACE

A Monthly newsletter devoted to the art of Darkroom Photography

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Using Dye Transfer methods to improve your Cibachrome prints

"Here is a rather unique way to use the dye transfer process to improve a Cibachrome print. This is a way that you can use your Dye Transfer knowledge and skills to improve any kind of color print. Sometimes the prints made by direct exposure lack details or color saturation just because there was little detail or saturation to begin with.

If you ever made a print using the Cibachrome process, you know that if you have a dark area or color it is a simple procedure to lighten such an area. This is usually done by making a frisket and burning in the area and sometimes using a filter at the same time in order to affect a color change. A dark sky can be improved simply by just burning it in, as if it were a black and white print.(But working from a positive and not a negative). If the area in question has involved and delicate edge details, then an accurate frisket should be cut and used when making any burn in, being careful not to eliminate any edges. Just as if you were working with a black and white negative, areas could be lightened or even darkened by simple darkroom techniques. But how would you go about darkening an exact area? It's possible to make a hold out frisket that would cover the exact area in question and enable you to further darken the area quite easily. But what if the area was too light to darken properly without looking artificial or if the color was too weak and the result looked muddy? The answer is to use the Dye Transfer techniques that you have been using all along.

If you were able to transfer a Dye Transfer image to a sheet of Cibachrome paper, would that surprise you? It shouldn't. The Dye Transfer dyes will transfer to almost any emulsion. It helps if the emulsion is mordanted.

What is mordanting? It is a simple technique for hardening the emulsion so that dyes will not bleed and mordanting will especially harden the clay base located between the emulsion and the paper itself. This is known as the substratum base. Hardening will prevent the dyes from penetrating through the base and bleeding through to the paper itself.

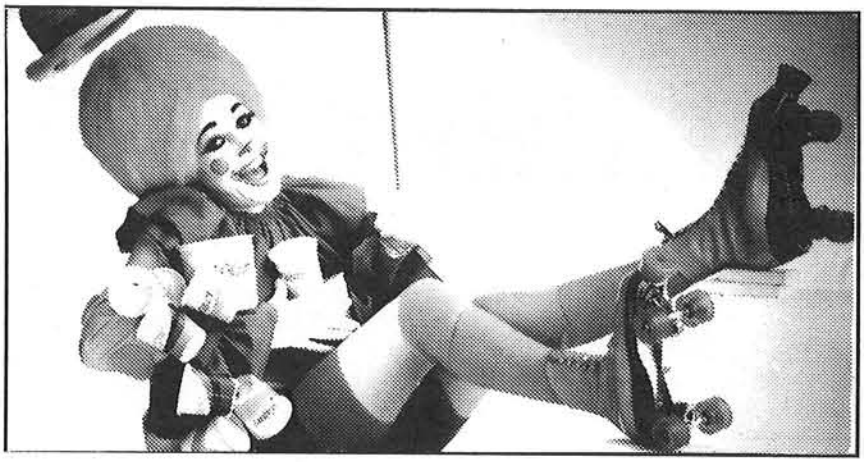
Making a Frisket

The chore of making a mask and holding back such an area on the print seems to be a lot of work. It almost seems easier to shoot the job over and make a new attempt at a print. But, what if you couldn't shoot the job over and your reputation depended on your being able to correct the problem to the clients satisfaction? There must be a way to make an acceptable print. Well, there is.

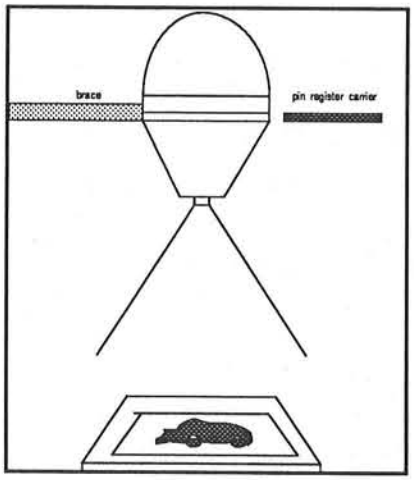
First of all, let me explain the correct thing to do very simply, then go over it again in detail so that you won't miss a thing. Making the frisket (hold back and/or burn in mask) is the first thing to do. After that you must make a separation negative of the transparency. You can choose a specific filter in order to capture as much detail in the negative as possible.

The negative must me made from the original transparency on register pins and used in the same enlarger as the transparency when making the enlarged print.
The Ciba print is made using register pins in the carrier and on the easel. The paper must be punched and placed on the easel using register pins and vacuum. Everything must be locked down tightly.
After the Ciba print is made and dried, it is placed in the paper Conditioner for 2 minutes. The colors will not bleed.
Using the new separation negative and the frisket make a matrix of the area in question and dye it in the appropriate color. Rinse the matrix as you normally would, then place the Cibachrome print on the transfer tables pin system and roll out the print. Then roll out the matrix over the Cibachrome print. Transfer it for about 3 minutes and then peel it. The difference will amaze you. Squegee the print and dry.

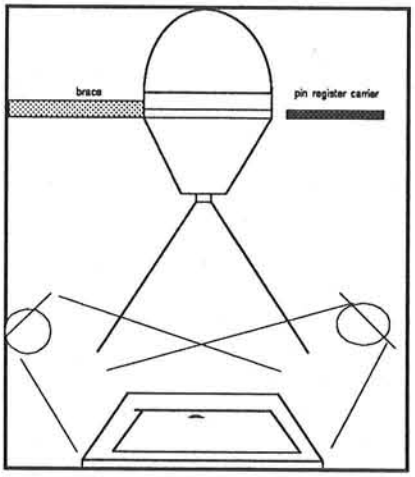
Now, here are the details that you should be aware of.
Making the frisket is the main problem to contend with. In order to make a very accurate cut out of the image, the right way to do it is to make an enlarged image on a fairly rigid material such as Kodalith film. Using pins in the carrier and on the vacuum easel, make sure that everything is locked tightly.
Using the transparency, make as large an image as you can on Kodalith film. Soft develop it. (this means using a weak developer so that the edges of the image will not be lost).
After the film is developed and fixed and washed, squegee the film and hang to dry with very little heat. Just use a warm gentle air flow. The only reason for using Kodalith film



The illustration in question



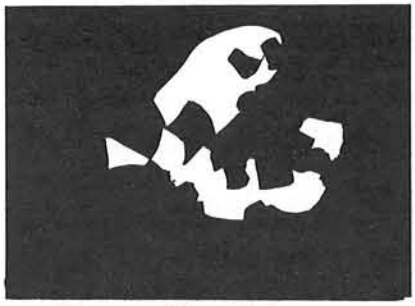
Making the large Kodalith



Copying the Rubylith

is because of its ability to maintain its size and shape. Remember, this sheet was originally placed on a vacuum easel with register pins. Now place this finished Kodalith film on a light box that also has the same kind of register pins fastened to the glass. Place the Kodalith on these pins, emulsion up, and then punch a sheet of Rubylith film, emulsion up, and place it on the same pins. (Rubylith film is a graphic arts material that is a red membrane on a clear film background). The red part of the Rubylith film can be scored and peeled away, leaving a clear area that could be used as a burn in frisket.
After this sheet is perfectly cut and peeled, then place it on the same vacuum easel and place a thin sheet of white paper under it. Place two lights on either side and use the enlarger as a camera. Replace the transparency in the carrier with a sheet of unexposed Kodalith film, emulsion down. Make a guess about the exposure. It will be quite short. Process this small sheet of film in a stronger developer such as Kodalith Developer or Kodak's D11. This will result in a piece of clear film with a black image on it. This has to be reversed. Use a contact frame or vacuum platen in order to achieve this. Expose the first frisket to a new sheet of film. Again, use the same kind of film and developer. The result should be a sheet of black film with a

clear hole in it. This is the main frisket that you will be using.



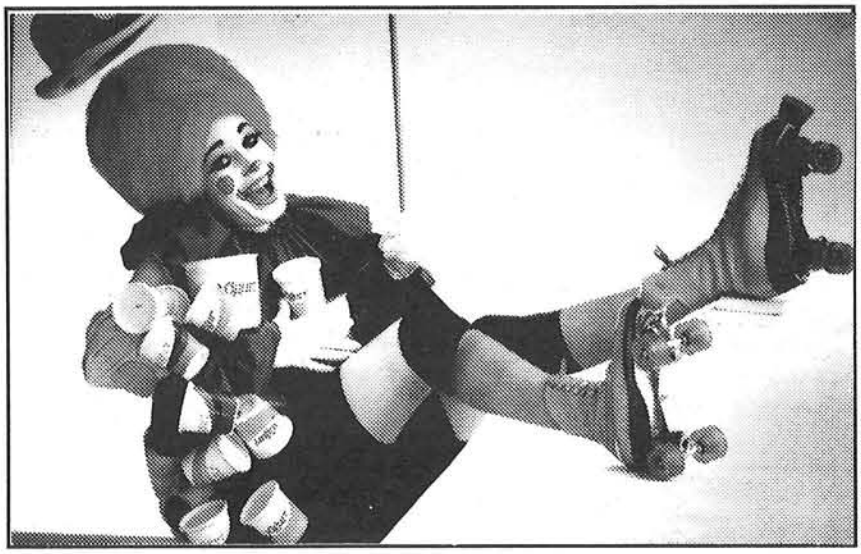
The resulting frisket

The next step is making the separation negative. Look at the transparency through a set of separation filters. I personally use the Red 29, the Green 61 and the 47 B for the blue.
Try to find which color shows the best detail. When you find what you believe is the correct amount of detail, use that filter and make an exposure of the transparency onto a sheet of Panchromatic film such as Super XX and process it to a gamma of .6 or less. If necessary, make a highlight mask by making a very short exposure on Kodalith ortho film and process it so that the highest density reading will not exceed .40. Add this highlight mask to the separation negative and this will insure you of getting great modeling. In fact, maybe too much. You must be very careful not to over do it.

Now it's time to make the Matrix film. It must be the same size and in the same position as the Cibachrome print. In fact. it must be made on the same enlarger.
You will be making the matrix to the exact size and position to fit the Ciba print. All you will be exposing is the part of the image that you want to improve though the frisket. This image, after developing and hot water rinsing and drying, then dyeing, will finally be transferred to the Cibachrome print.

At this point, you have a big decision to make. What color should you use to make the improvement? Sometimes you will have to use a combination of colors. And don't be surprised if you end up making more than one transfer.
You should make 4 or 5 Cibachrome prints. When you are ready to use them, place them one at a time in the paper Conditioner. After 2 minutes, place the print on pins and in position, then rinse and transfer the matrix to the area. Peel the print after three minutes and observe the results. If the colors are off, you have a few methods of corrections available.
You can use chemicals used by retouchers at this point to correct the colors caused by the Dye Transfer dyes. Or you can wash them out and go through all of the steps all over again. Or you can start another print and change the dye components to affect a color change.
The advantage of this system is that you are not just transferring a color or density to the area, but instead, you are transferring a detailed form that contains color and density thereby adding to the modeling and color saturation of the original.

The straight print



The improved print

The Invasion

The recent invasion of the Dye Transfer market by the new digitizing scanners is taking its toll on the labs that concentrate on serving the advertising agencies. This revolution has been going on for about 5 years. The labs that have concentrated on advertising agencies are being affected the most. It's ironic, that the group of lab technicians that have benefitted the dye transfer field the most has to be the one group that is most affected by the scanner revolution. Labs that concentrate on scenics, portraits or special effects will keep busy and continue to keep the life of the dye transfer business alive and well. The art photographers will be the group that will take advantage of the fact that there is no process like the dye transfer process. Color changes and contrast changes are easy to come by and this fact enable the photographer to use his creative ability in order to produce outstanding images. I have always felt that photography is a two fold medium. The camera is the most important part because it is here that the image is formed and where everything that follows owes its existence to that fact. But the photograph can be made or lost in the following steps. If the transparency or negative is not printed to its fuller expressive quality, then all you have is a nice transparency. But, when properly printed, the sky is the limit. No other process has so many varied controls that will enable it to be a complete expression of the artist. Elliot Porter found this out many years ago. He could photograph a beautiful landscape and make it a masterpiece by his printing techniques. So can you. The scanner will never be able to replace the human touch. The most important thing to remember is that even with this invasion by the scanners, there will always be room for a quality Dye Transfer lab in the advertising field, because the scanner is still incapable of doing some things.

A further word about color correction

The colors in a transparency will never reproduce accurately when making any kind of color print. The only chance you may have of ever getting close to an accurate color rendition is to make your print with the dye transfer process.
The dyes in the transparency may or may not be close to the original scene. We really do not care about that too much as long as the rendition is pleasing to the eye. But the real problem is with the separation filters and the dye transfer dyes themselves. Unwanted colors manage to get through the filters and "dirty up " the final rendition. As a result, the warm areas in the print will have too much cyan printing there as well, and that will make for impure color in these areas. The greens will be contaminated by the amount of magenta that has crept into these areas. And, likewise, the blues will definitely have too much yellow in these areas.

As a result, even though the print may look pretty pleasing to the untrained eye, the final client, if he is an art director or an art photographer, I can assure you, has eyes that have become expert.

The problem is "How to get rid of the unwanted colors ? "

One way is to find a method that will show you just where these areas are and what they look like. There are a few ways to find the areas, such as just looking at the test print and the transparency, and then add "cocine" dye to the appropriate negative and the right area, and that area will be print lighter there and will print less color in that particular space. For instance, if cocine dye were added to the cyan negative in the area where a red hat may be, it will lighten that area and print less cyan, therefore, warmer colors would print with less impurities. However, this is a hand operation and even though some skill is involved with it's application, it would be inadequate if you were trying to color correct a plaid garment, or a multiple colored scarf. So we must conclude that the only way is to find a photographic approach to solving the problem.

One solution is as follows:

After a set of separation negatives are exposed and processed, make a set of positives and combine them in the following manner.
To the cyan positive add the magenta negative (green filter negative.)look at it. You will plainly see where the areas that will print the warm color are. If you make an exposure on a sheet of Pan Masking film and processes it to a gamma of 25%, this sheet could then be used by placing it on the cyan negative when printing the matrices. This would hold out density in the cyan printer wherever there were warm or red areas.

Think about this for a minute. I have been able to isolate the red areas from the cyan layer by using the magenta positive combined with the cyan negative.
If you added the yellow printer negative (blue negative.) you could also remove cyan where ever the area was in a yellow hue.
One step further and conclude that if you first expose the magenta printer and then the yellow printer on the same sheet of pan masking film, you will be able to color correct the magenta and yellow and all the mixtures of these two colors at the same time with one sheet of pan masking film made with a combined exposure.

The procedure here is to use the two opposite colors from the separation negatives by combining them with the positive of the color you want to correct.

Follow this procedure:

The cyan positive combines with the magenta printer, then the yellow printer, exposed one at a time on the same sheet of pan masking film. Identify this sheet to be used with the cyan negative when making matrices.

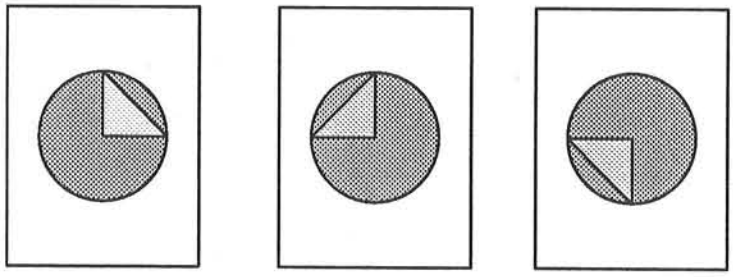
The magenta positive combines with the cyan printer, then the yellow printer, exposed one at a time on a second sheet of pan masking film. Identify this sheet to be used with the magenta negative when making matrices.

The yellow positive is combined with the cyan printer ,then the magenta printer, also exposed on one sheet of Pan Masking film then used when making the yellow printer matrix. Identify this sheet as the correction for the yellow printer.

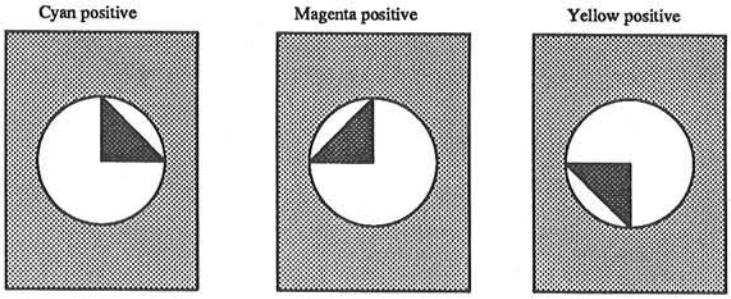
In order to eliminate edge effects, the sheets should be exposed emulsion to emulsion.
The exposure should be short so the density does not exceed .3.

If, when combined, there is no significant amount of color seeping through the sandwich, then do not make any exposure for that particular color correction.

Use white light for the exposure and remember to keep the exposures short.

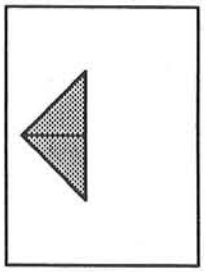


red filter negative | Green filter negative | Blue filter negative



Cyan positive | Magenta positive | Yellow positive

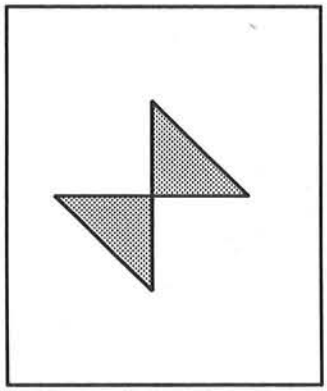
If you first combine the cyan positive with the green filter negative and make an exposure, by contact on Pan Masking film, then remove the green negative and replace it with the blue filter negative and expose it on the same sheet of Pan Masking film, the following will result.



Note: the densities just show where the warm colors exist.

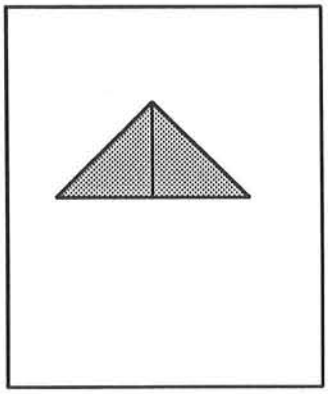
Place this mask on the red filter negative (cyan printer) when exposing the cyan matrix. This will hold out exposure where there are warm colors. These colors will be cleaner and lighter.

If you combine the Magenta positive with its two opposites, the red filter negative and the blue filter negative, you will have succeded in isolating the green and blue areas and then can remove the amount of magenta from those two colors or any combination of those two.

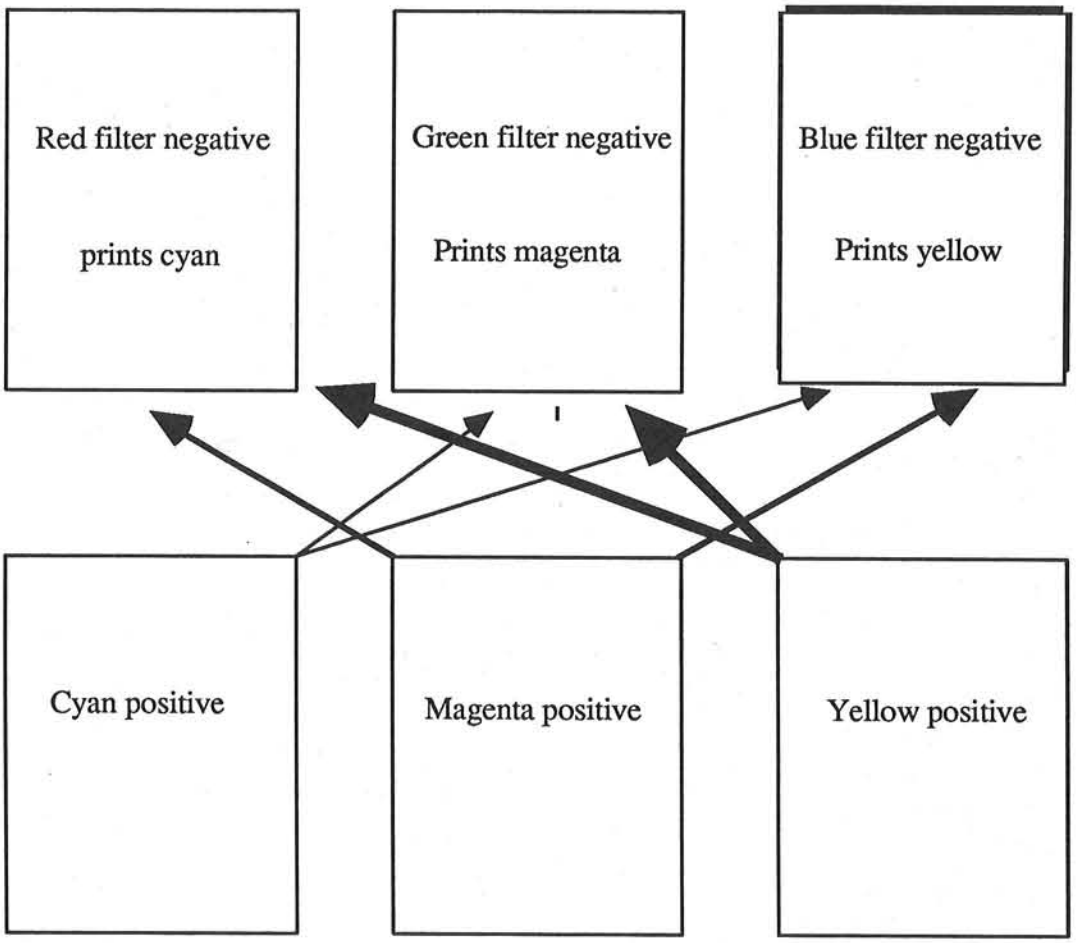


Note; The areas covered by the mask only affects the green or blue colors or any combination of the two.

Finally, if you combine the yellow positive with its two opposites, the red and green filter negatives, one at a time, the following will result.



Note: The Colors affected by the mask will hold out yellow from printing in any cyan or magenta areas or any combination of these two colors.



The combinations are easy to follow:

The cyan positive combines with the magenta and yellow printers.
The magenta positive combines with the cyan and yellow printers.
The yellow positive combines with the cyan and magenta printers.

This system is not foolproof but it does allow the technician the ability to alter the original so as to improve it.

A few reasons for the way I write

The reason that I go into such detail when explaining specific techniques is because of the letters and phone calls that I receive day and night.
Some of the questions are very accurate and make me think. For instance;
One caller asked me if my system for determining the gamma of masks and negatives was accurate since I was only using two points for drawing my conclusions, (as well as straight lines). The answer is "not 100% accurate." But since we were only interested in finding a relatively small area for determining our contrast levels, that I wasn't concerned with the small error. But the caller was right. By only using two points from which to draw my conclusions, I was not getting the whole picture. If you were to make 5 sheets of film, all with varied exposures of a three step grey scale, but identical on each sheet, and developed them for 5 different times , and plotted the results, you would find that instead of a straight line between the high and low development times that you would actually produce a curve shape for both the development time and the exposure time.
Another caller asked me how to determine the correct exposure for a mask, when the low end was too low. He wanted to increase the density of the shadow by .20. His original exposure was 10 seconds, and his contrast level was 30%.
My answer is as follows.
Using a scientific calculator start by using this formula:

1. .20
2. Inv.
3. Log
4. X 10 seconds = 15.8

should be the new exposure. **But,** we are processing to a gamma of .30. This means that our development time must be increased or we will have not added to the density as we wanted. Think about this for one minute. We are processing a sheet of film for 30% of its normal slope. This means that we must increase the developing time to compensate for the weaker development.
If we divide 30% into 100% the Answer is 3.33. The new exposure (15.8) **must be multiplied by the Factor** of 3.33 in order to achieve a .20 increase in density. Therefore, 15.8 X 3.33 = 52.6. Our new exposure is 52.6. I know this sounds impossible, but it is a simple matter of mathematics. The only change in the film will be a slight increase in contrast as the added exposure will add to the contrast slightly. The same occurs when you change development times. The density will change also.

What would you do if the reading was .20 too high? Just do the following:
1. .20
2. Inv
3. Log
4. 1X
5. x 10 seconds = 6.3 but instead of multiplying the answer by the factor of 3.33, we would **divide the 6.3 by the Factor of 3.33** and the answer would be 1.9 seconds. Try it if you have any doubts.

Have you tried T Max film and H C 110 developer (dilutionA), for making separation negatives? One of my students, David Levy , in Deal N.J. has sucessfully produced negatives processed in an automatic Jobo processor.

He first loaded the three sheets of 8x10 T. MAX into the appropriate Jobo tube. Then he pre-soaked them for 5 minutes in tempered water. Then he procedded to process the films for the same times.About 5:30 at 70 degrees. The slight differences in contrast were easily corrected by adjusting the dyes. The contrasts were very close to each other. The use of a Jobo for processing separation negatives were usually discounted because of the need for different times.
He plans to process his matrices in the same Jobo processor. There is no reason not to do so except for the saving of time when processing in a tray.

Consider me the answer man

If you ever have any questions that need answering, I will try my best to make sure that I answer you either by mail or phone, or in this newsletter. If I don't know the answer I will definitely find out.

For those of you who are interested, I have planned to produce a video in the spring of'88. This will be a lengthy video but I can assure you, it will be accurate.

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The cost is $60 per year.
The past issues are $5. ea.
And my book "the Art of Photo composition" is still available
The cost is $50 per copy.
If you are involved with education in the field of photography this will be a good reference book to delve into.
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