

KEEPING PACE

A Monthly Newsletter devoted to the art of Darkroom Photography

Volume # 25 July 1989

A correction and improvement

In the last issue I wrote about a simplified system for making Dye Transfer prints from color negatives. I even mentioned the fact that once a particular balance and filter pack was established, for the C print, and the exposures were established for the 3 separation exposures, all that was necessary after that was to simply expose the 3 images according to the original calibration and that was that. The balancing filters were to remain intact. **Well, I am afraid that I made a goof.** Sure, this method of exposing will work, however, if your filter pack has a rather large amount of yellow filtration, then the exposure through the blue separation filter would be extremely long. To make things right, let me first summarize the initial system that I explained in

the last issue.

1. Make a "good" print of a grey card from a color negative using C print paper.
2. Make a matching print using Pan Matrix film and exposing the matrices through the red, green, and blue filters.
3. Record all of the exposure times and light levels of each process and establish a factor for the main exposure and also for all of the subsequent exposures of the separation filters.
4. Then I said that all you had to do from now on was to make a "good" C print, determine the factors and expose a set of matrices.

I found that the exposure

times for the yellow image, when producing a test, were so long that it became impractical to make the matrix exposures with the balance filtration still in the enlarger. **Instead, I came up with a better solution.**

1. Make the C print, as before. Record all of the important items such as filter pack and light level. This is done by reading the light on the easel without the carrier in the enlarger
2. Make a matching print with Pan Matrix film. If the image is of a grey card, do the following:

Make a strip set of exposures of the red filter exposure only. Examine both the C print and the new strip test carefully, through a red #29 filter. Find the exposure that matches the C print.

3. Make a full 8x10 exposure of the red filter image and notch it for identification.
4. Then proceed to make a strip set of exposures (from left to right) from the green filter image. Then expose a strip test (from top to bottom) of the the Blue filter image.
5. After processing these three matrices, transfer them and you should be able to find a close match to the C print. If you are close, but still not quite satisfied with the accuracy, make another test with even finer steps between the exposures.
6. Once the grey match has been found, record the exposure times and the light level.

Now for the actual procedure in producing a set of accurate matrices from a color negative.

For our demonstration only, let us assume that the "good" C print had a 15 second exposure, a light level of 1.50 (I use a Wallace Fisher easel exposure meter)
The filter pack was;
25 magenta
45 yellow.
This set of circumstances produced a "good" print.

The light level for the Dye Transfer set of exposures was 1.00, and the exposures were Cyan....20 sec.
Mag... ..30 sec.
Yellow..50 sec.

Now, a new color negative has arrived on the scene. The filter pack has changed to;
15 magenta
60 yellow.

I will make sure that the light level is the same as it was for the test. However, the difference in filtration between the "good " original calibrated C print and the new readings will be all that you need to determine the new exposures for the matrices.

Here is how:

The three exposures for the matrices, according to our original tests, should be:

20
30
50

However, the difference in filtration for the magenta and yellow are as follows:

Minus .10 magenta
plus15 yellow.

These numbers can be used with logarithm to increase or decrease the actual exposures on the matrix films. The Cyan will remain at 20 seconds.

The magenta will be minus .10, or 23.8.
The yellow will be plus .15, or 70.6.

I would suggest that you review the system for using logarithm using a simple Texas Instrument calculator called the TI 30 III

It works as follows:

To decrease the exposure because of a lower density reading, do the following:

1. Press the difference in density. (.150)
2. Press the **Invert** button.
3. Press the **Log** button.
4. Press the 1/x button.
5. press the original exposure (in this case 30 seconds)
6. Press the **X** (times) button and the new exposure will be revealed to you. (23.8)

To increase exposure because of a higher density, use these steps.

1. Insert the difference in density. (.15)
2. Press the **Invert** button.
3. Press the **Log** button.
4. Press the **X** (times) button.
5. Press the original exposure (in this case, yellow, 50 sec.)
6. Press the = (equals) button and the new exposure will be revealed. (70.6)

I would suggest that you make a test print of the most important part of the photo before you commit yourself to burning up three sheets of matrix film.

There is nothing in the color print field that is linear. Because of the many variables that you will encounter in producing a print, tests must, and should be made before making a "big" one.

Another piece of electronic equipment known as a **reflection densitometer** would be an invaluable aid in determining the correct exposures when matching colors.

I hope this clarifies the subject.

Cibachrome

I promised that I would be testing the new chemistry developed by "Dye Chrome Co." in Florida. Unfortunately, I was supposed to get together with Edgar Prauss in Rochester, N.Y., but circumstances prevented our getting together. I will try to establish another method of testing.

My real concern is this.

Is this "control" of the contrast by manipulating the amount of time in the bleach really adequate or just a method of lessening the contrast without any real accuracy.

The method that I have been

teaching, and advocate strongly, is as follows:

1. Determine the **density range** requirement of your own enlarger in order to accurately fill the contrast requirement of the Cibachrome paper.
2. **Make a mask through any filter** or combination of filters in order to affect the overall color rendition of the original transparency.
3. Process the mask to the **exact gamma** in order to produce a high quality reproduction grade print.

This is the system that requires a bit of mathematics and understanding of the process. It also means that you must have access to a densitometer

In addition to making contrast reducing and "color correction" masks to the correct gamma, we can also make a "bump" mask in order to restore some of the highlight structure and "snap". **This issue was discussed in Volume # 1.**

I mentioned the fact that color correction was very possible with the Dye Transfer process. It is also possible with the Cibachrome process. I discussed this thoroughly in **Volume #7**

Jan, 88.

What I am saying is, that it is possible to reduce contrast of a Cibachrome print by various means.

One is processing manipulation, the other is a mask made by exposing your transparency onto another sheet of film or glass and hoping for the best.

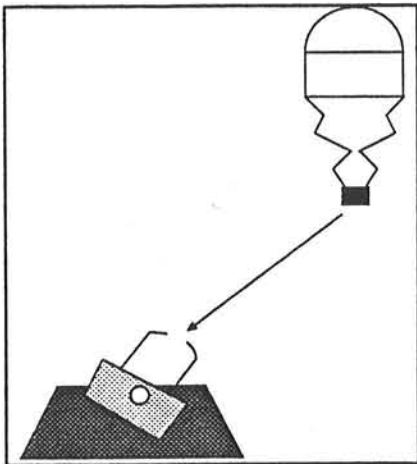
The question is this: Do you want to be as accurate as possible so that you can predict in advance just what kind of print you will be capable of producing, or do you want to work with a shotgun approach.

I assume that since your are readers of this monthly publication, you are interested in the higher quality.

Another idea that came to me was this.

Have you ever wondered about the "**cosine**" **problem** when using a meter? This is the problem where the angle of light entering the probe is at such a degree that precise readings are impossible to make.

The reading probe that is used with the **Jobo Star 2000 easel analyzer** is a perfect solution. They installed a clear plastic dome with a hole in it and allow the light from the enlarger to go through the hole and into the probe.



The simple fact is that the probe can be angled so that the image can hit the probe at the correct angle. A shadow caused by a dark ring drawn around the hole in the plastic allows you to see the shadow on the probe so that you can place the instrument correctly.

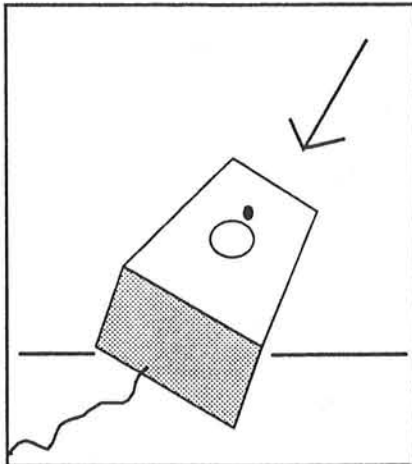
I use a Wallace Fisher easel meter. There is no provision for tilting the probe accurately.

However, I came up with an idea:

If the probe had a small mirror attached as close as possible to the probe opening, then I could reflect the image back to the lens and I would then have a correct angle for the probe.

I purchased a small dental mirror and used just the mirror portion. I heat glued it to the space just under the probe.

By angling the mirror so that the image would reflect back to the lens I got a perfect and repeatable reading.



The last few students that I had visit me for the Dye Transfer course brought with them various transparencies.

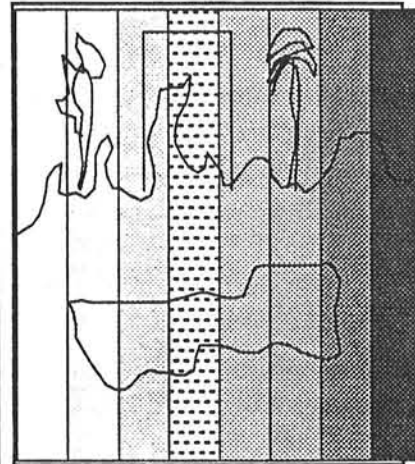
In order to make sure that they understood the method that I use for exposing matrices, I taught them three methods of determining the correct exposures.

A grey scale is a must.

I use a three step grey scale because it represents the straight line portion of the film that I propose to place my image on.

With a good meter you should be able to determine the differences between the three readings of the middle step of the grey scale as it is projected on the easel.

If you make a strip test of the Cyan **image** and determine which exposure looks about right by examining **both the transparency and the cyan image through a red #29 filter**, you should be able to choose which exposure you like.



Mark the reading density along side the exposure time for that particular cyan strip. By using the log scale on your **TI-30 III** calculator, you should be able to determine the other exposures.

Another method requires the same strip test for the cyan color, but the readings must be of a neutral area in the photograph.

The third method means making black and white bromides. This is the old fashioned way that color prints were made before easel meters and brains caught up to the rest of the world.

With this method, the cyan negative was used to make a black and white print, and both the print and transparency were examined through the same # 29 red filter.

When a satisfactory exposure was found, then the other two negatives were printed until the neutral area looked like the cyan printer.

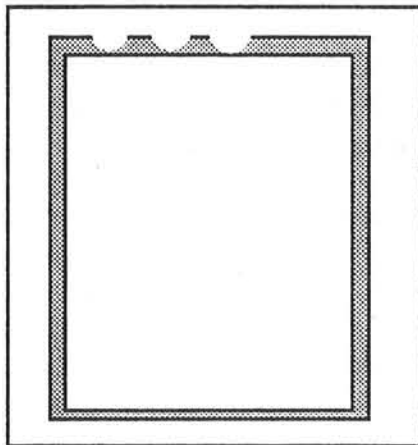
The next step was to find the difference in speed between the paper and the matrix film. A simple factoring method is all that is necessary.

Every transparency that I prepare for making separation negatives for the Dye Transfer process, has a three step grey scale attached to it. (Q6C)

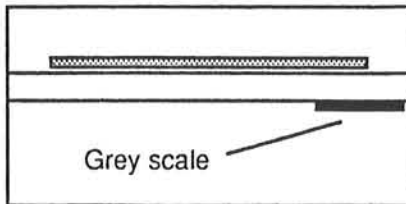
I cut the color portion of the grey scale off and just use the three grey patches.

If I am working from an 8x10 transparency and am using 8x10 separation negative material, there will be little room for attaching any kind of grey scale without getting all kinds of tape lumps and possible damage to the original transparency.

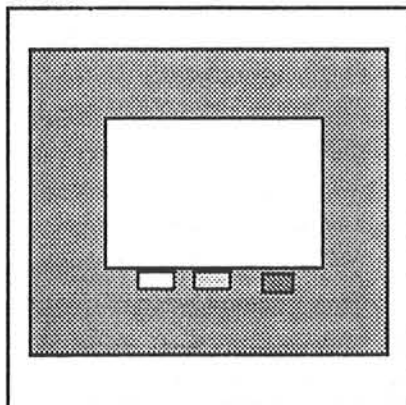
I punch three little half moons into the black edge of the film.



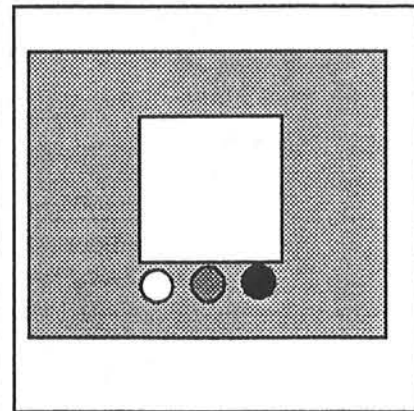
I then tape the grey scale to the underside of the glass. The densities of the three step grey scale will record on the extreme edge of the film without damage to anything.



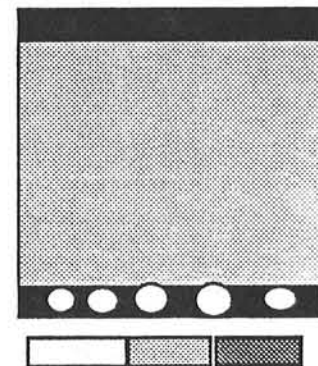
If I am working from a 5x7 or 4x5 sheet of film, I will then cut the original transparency into a larger sheet of film to fit my printing format (which happens to be 8x10). I will have plenty of room here to place the three step grey scale.



If I am working from a 120 size image, again, I cut and mount the transparency into a larger sheet (4x5) of the same thickness (.004 mil.) Rather than try to cut and place the grey scale into the film assembly, and risk the chance of losing a flat surface, I punch three round 1/4 inch holes into the very edge of the image and into the mounting film. These holes are space apart so that they will show the three steps of the grey scale when it is taped to the underside of the glass.



When working with a 35mm transparency, I cut and mount the transparency into a sheet of film that is 2 1/4 sq. of the same thickness. When mounting this 35mm transparency, I deliberately do not cover one end of the sprocket holes. This allows me to tape a three step grey scale to the underside of the glass.



I can now be assured that the grey scale will travel with the job and be very valuable in assisting me in my calculations

I have discovered that there are many photographic color enthusiasts that have never been in the darkroom. In fact, there are many C printers with great reputations that have

never used a tray. This fact used to bother me. I used to say to my self, "How can a person involved with photography never get his, or hers, hands wet?"

Then I realized how long I have been in this color field and how many inovations have been realized in all of these years.

Many younger people who began in this color field since the 1970's never had to get into a wet darkroom. The exposures were almost automatic, except for guys like me, and the processing was always done with a roller transport processor.

The fact that the exposures and processing had to be accurate didn't mean that they had to be darkroom wise.

However, now that I have been getting a lot of students who are interested in the Dye Transfer process, I realize that I have to dwell on the simpler aspects of the process, namely, handling the material when it is wet or dry.

Hands play a rather large part of the Dye process. Without adequate hands for processing or even just handling film, life will be miserable.

Some lab owners always based the acceptance of a new employee by the kind of

hand action he displayed.

If the new prospect showed easy acceptance of the film handling, he felt that the math and theory would finally catch up.

I always felt the opposite. I would ask many questions of a new prospect. The questions mainly were involved with the ideas and understanding about any darkroom process.

I would interview a new man and after I was satisfied that he (or she) had the necessary brainpower to handle the job, I would present him with a roll of film and an empty Nikkor reel and ask him to load it. If he only floundered a little, I would consider hiring him. However, if he was a complete fish out of water, then I would either look elsewhere or consider training him from scratch.

If any of you, my readers, feel that they lack experience in their darkroom, read my back issues of this newsletter and you will find many examples of how I handle film, paper and chemistry.

The Kodak Dilemma

A new wrinkle has appeared on the scene. Kodak has informed the Dye Transfer labs that the film used to produce highlight masks and was called Kodalith Pan film is to be removed from the

market. Kodak claims that dangerous chemicals appear in the developer because of the chemical content of the film.

Good Lord, I have been using this particular film since 1951. Now what do we do?

Don't let this news worry you. Kodak has announced that they will be substituting a new and safer film in the very near future.

In the meantime, get whatever you can of this film supply, and when it is finished you can use a Kodak product called, Contrast Process Pan. This film can be processed in either dilute HC 110 (25 cc per liter) or even D11.

This film has a longer slope and can be tricky to handle. It needs more time to fix and wash, but it works fine.

There is no law which states that you must use Kodak's film. The competition such as DuPont, Ilford and Fuji, all make panchromatic litho films. Call their representatives or ask any engraver that is not hooked up to a scanner, just what kind of film he is using for making highlight negatives.

However, my experience with Kodak is that they will undoubtedly produce a new and better film to replace Pan Kodalith Film.

Different kinds of light sources for contact printing.

I constantly get phone calls from students or readers asking me about what kind of light source to use when making masks or separation negatives by contact.

There are many ways to make separation negatives using a contact system. Let me explain a few.

Using an enlarger as a light source.

You can use an incandescent bulb with a diffusion system or you can use a Pulsed Xenon system. If you like to use a condenser enlarger, then you can use all of the above light sources, and you could even use a pin point light source.

You can forget about cold light sources for making separation negatives because the color of the bulb is wrong. It is not a full spectrum

By using the enlarger as a light source, you will get a bonus.

Once a set of balanced exposures is found, and exposure changes must be made because of the density of the original, only the light level will have to be ad-

justed. This is done by adjusting the f stop.

You can use a **K & M light source, which comes in a few different models.**

The light source itself is a 20 volt bulb which burns at 100 watts at full power. This unit come with a 3 step, or 5 step transformer which will enable you to pick out various levels of illumination to work with. This unit consists of a transformer and an acorn light similar to the Kodak safelight, and a 7 hole filter wheel, which is activated by pushing one of 7 buttons and the wheel will turn to the hole you want.

This is a very impressive unit. It save lots of time, and also your back, because you won't have to bend down to change filters

If you plan to place this filter wheel system below your table, that will work fine. That's where I have mine. One thing to be aware of is this:

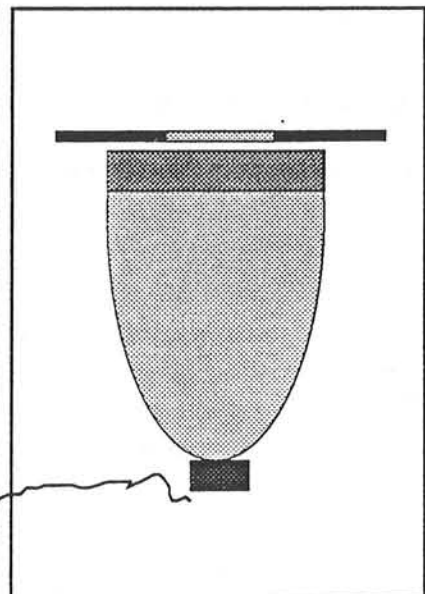
If the source of light is a point source, then make sure that the bulb is about 8 to ten feet away from the film plane or else you must diffuse it. The filaments of the bulb are visible as uneven light when you are too close to the light bulb. If you don't want to get involved buying a light source, then you should

make your own.

With a few simple items that you can purchase from any electrical supply store, you can make a simple wheel and light box.

Condit Mfg. Co., makes a system that I described earlier in these newsletters. It is one of the nicest units I have ever seen. It uses a 75 watt bulb and two wheels. These small wheels sit on top of the work table and face downward through a hole cut into the table to a mirror on the floor, which is angled so the light travels back up to the platen (pressure type or vacuum)

You can even use a household bulb, since the bulb usually burns at 2800 Kelvin, you will find the Blue filter exposures too long to really make sense. Besides, the enlarging bulbs hold their bright



Marketing

Some of my students are in a quandary about where to show their prints. This is nothing new. We have all gone through this process. The name of the game is "perseverance". I will elaborate.

Showing your work to a prospective client is not easy. The first thing to ascertain is **Where?** Once you know where your market is, the next step is **Who?**

If you are engaged in the crazy field of advertising, the simplest thing to do is make a list of all of the agencies in the Yellow Pages of the city you are interested in conquering. Contact the agencies and ask for the names of the art directors from the receptionist or ask for a list by mail. While you are at it, get a list of the production managers and their assistants. This may take a lot of phone calls, but the names you get will be current and important.

Make sure that you make an appointment to show your work. Art directors get annoyed when their day is confused by people asking to see them when they are busy. Don't be afraid to show an art director a cosmetic ad

when he is involved with car ads. Just make sure that something to do with cars is in the same portfolio.

If your work warrants attention, you will be called. Remember, the ad agency needs qualified printers to make their clients products look good. **This is a tough field.**

However, if you are in the "art" market, you problems will be a little tougher. You will find many galleries uninterested in your work if you don't already have an important name. After all, their main goal is to sell photographs, not promote you.

The persistence factor is needed here more than anywhere else. Make sure that you call ahead and insure the fact that you are being welcomed with time to show your work. Don't ever barge in on a potential buyer.

The biggest problem today is that most photographers do not print their own work. When you print your own work, the pride in accomplishment is strong and you want approval. Some artists have a gimmick. I have seen prints that were made by placing a plaid shirt under the enlarger and exposing through it to produce a strange Cibachrome print.

Most exhibitors that show Cibachrome prints make their prints on the glossy stock. Making prints on the high gloss paper makes it difficult for patrons to "see" the print without constantly moving from side to side. I would rather make the Ciba prints using the pearl finish and show them without glass.

When you mention to the gallery director that you have a series of Dye Transfer prints to show, then the door opens quite easily. The simple fact that you have made Dye Transfers of your work means that you are either rich or have very good taste and intentions.

My thanks to those of you who have re-subscribed to this newsletter. To those of you who have not yet subscribed, the cost is \$60 per year. My book "The Art of Photo Composition" is still for sale at \$50 per copy

Keep your eyes peeled for information on my video and book It should be done shortly. We had some medical problems to get rid of. Now we are proceeding at full speed.

Thanks,

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