

# KEEPING PACE

A Monthly Newsletter devoted to the Art of Darkroom Photography

Volume # *21 March* 1989

## Density and color corection with a brush

"Density correction" and dodging with a brush. To most darkroom workers, dodging and burning in is done with the hands and a few, dodging and burning in, tools.

If you are currently producing black and white prints for reproduction, or as a exercise in fine art photography, you must be aware of the fact that almost all photographic printing can be, and is, improved by specific dodging and burning. This is the technique that all successful printers employ. This has been going on since photography in the darkroom was first invented. But most of today's current flock of darkroom experts probably have never heard of "Cosine".

This almost forgotten method of dodging and color correction was the primary

method of manipulation back in the early part of the century.

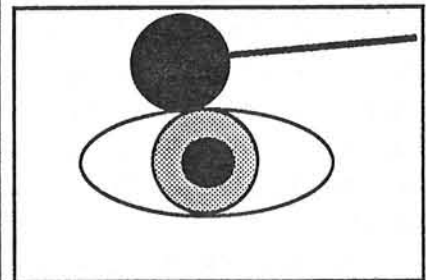
Just what is "Cosine"? It is actually called "**Crocein Scarlet**". It is manufactured by Kodak. Cat. # 146 3751. It happens to be a special dye that is sold in powder form. When mixed with water, it produces a strong red color and it can be applied with a brush to any area of the emulsion of a piece of film (or glass plate) and it's color acts as a holdback mask.

The word "cosine" is a mispronunciation of the word "Crocein".

Here is how it works, and this is the main advantage of using this dye, rather than working with tools or by hand.

For instance, if you are producing a print of a portrait in black and white, and only

the eyes pupils have to be lightened, you would be hard pressed to try to use a little dodge on a wire and hold it in the exact place for each eye.



It's possible, of course, to use a wire dodger, but the exact placement of the dye on the negative, or on a separate sheet of clear film, would be an easier chore. The strength of the dye depends on how much lighter you plan to make these eyes. If clear film were to be used, then some sort of registration would be necessary. Just taping a sheet of clear film to the

original negative would probably suffice.

One method used by the old Carbro printers of yesteryear was to look through a green separation filter such as a green #61 while you were working with this dye on a part of a negative. The result of this filter technique was that you could determine just how far to go by examining the area with areas of similar required density.

Again, imagine a batch of dark hair on a woman in a group of blondes and you are trying to get the exact contrast level with your variable contrast paper, and realize that you must resort to some kind of dodging, it would be a lot easier to place a weak solution of "cosine" to the area in question and keep the dodging inside the limits of the hair and not allow it to creep into the background of the scene.

How is the material applied? The best method is to mix 4 different strengths of densities in small 2 oz. jars. Add 1 or 2 drops of photo flow to each of these bottles. This will allow you smoothly apply the dye to the right area without blotching.

I have applied it to a rather large area, and was able to make it look as though it were almost airbrushed.

**The biggest disadvantage** to this process is that you must wet the negative you

are working on, or the sheet of clear film. If you miss the edges, or apply the dye too strongly, then you must wash out the dye by first placing the entire sheet of film in a tray filled with developer (because of its alkali solution) this will loosen the grip of the dye on the emulsion. The sheet is washed again, and then dried. Then try it again.

I highly recommend practicing this technique with old negatives that are not important.

**What are the advantages?**

The dye becomes part of the image. In the event you have to again produce more prints from the same negative, the dodging has already been done for you. Anyone in your organization can go into the darkroom and produce a print with the same exact dodging. Imagine the feeling of confidence in producing a print when you are forced to give this printing job to one of your lesser skilled employees.

You can file this negative for years and still know that who ever prints this negative in later years will still have the original intent of the first printer or owner of the negative.

While we are in the imagining mood, suppose that a fine art printer of national fame used this "Cosine" technique to produce his most famous images, and

was suddenly called to his maker, any one with the rudimentary skills needed to make quality prints could now enter the darkroom and produce another image just like the master.

**What about "burning in" a photo?**

Can the same dye be used to increase density in a given area? The answer is **yes**. The technique is just a little different.

Using a sheet of clear film, either taped or punched and pinned in register with the original negative, apply the dye the correct area as if you were going to reduce the overall density. The technique here is to pretend to hold back the area, but when you are finished with the dye application, reverse the dye image on the clear sheet only, using a soft film such as Kodak's Pan Masking film. You will have to use a **green or blue filter** in the light beam path in order for this technique to work.

The new sheet of Pan Masking film will have an overall density with the area that needs burning in, remaining clear. The density of the mask will be the determining factor for the increase in exposure. Using masking strength developer is recommended when using this method.

**Remember, this "Cosine" technique should only be used when confronted with a small and difficult**

**area that needs correction.** Large areas can still be corrected using the present techniques.

**What about color negatives?** Can this approach be used when printing C prints?

The answer is yes. The technique is a little different. Instead of using the red "cosine" dye, use the black cake of dye that is supplied with Kodak's retouching colors, or any black dye, such as Spot tone dyes or Dr. Martin's black dye. Dilute these dyes with water to find the strength that you need. And in this case, always use a sheet of clear film to which to apply the dye.

This is to be done only on small areas that need exacting corrections in density. Don't assume that you can do color corrections with this system. It is possible, of course, but this technique is not aimed at color correction, but in density correction.

**The best part of this "cosine" technique is the fact that it *can* be used for color correction.**

This can really be called "color correction with a brush. By this I mean that if this "cosine" dye is applied to color separation negatives on specific negatives and in the correct area and manner, then actual color correction is not only possible but

very accurate and economical.

**Just what does the term "color correction" mean.** It simply means that we must improve the quality of a color by removing some, or all, of any unwanted portion of the three colors that make up that particular hue.

Remember, most colors in a transparency or in a color print are usually made up of parts of the **three primary colors, cyan, magenta and yellow.** The most brilliant colors are made up of only two colors or so little of any third color that the brilliance is hardly diminished. Eliminating the third color is the main effort in any kind of color correction.

**For instance.**

We have a red coat. Our test print shows the red coat to look too dark and not too brilliant. On further examination we conclude that the three layers of dye indicate that there is too much cyan in the coat area. As a result, the color looks dull and dirty. The "trick" here is to eliminate enough of the cyan so that the print will exhibit a brighter red coat, and yet, have enough cyan in the area to include definition. The size of the correctable area should be such that it would be easy to use a brush and eliminate the problem without affecting the background. If the area is too large so that it would be difficult to apply the dye,

then resort to a different method of color correction method, such as "The Isolation Color Correction System" covered in Volume # 7

Let us look at an imaginary landscape. We have separation negatives that were either made from a transparency or shot in the camera, one at a time. Let us assume that there are some flowers in an area in this landscape. The flowers are purple and gold. Our test Dye Transfer print show the colors to be muted instead of brilliant and sharp. We decide that we would like the colors to be richer and brighter. Here how this is done.

If we have a set of separation negatives, and these include the three highlight masks, then we can apply the "cosine" dye to a specific area on the highlight mask. In order to make the purple flowers look richer and not dull will mean that we must add this red "cosine" dye to the flower areas on the yellow highlight mask. This will result in less yellow dye printing in the purple flower, thereby making it appear cleaner and more colorful. Remember, we are basically working with black and white materials when producing a Dye Transfer print. The red "cosine" dye only acts as a dodging tool.

The gold flowers just need a



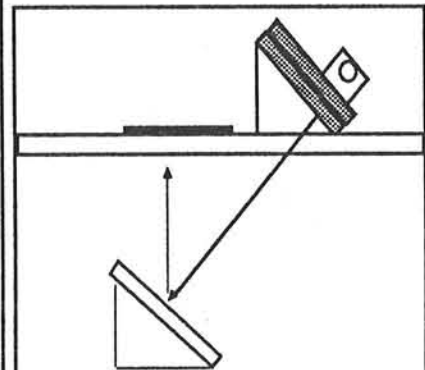
bit of cleaning up in the cyan layer and possibly some in the magenta, as well. The yellow needs to be left alone. The brightness is achieved by reducing the amount of cyan that prints. Areas that can be cleaned up include small parts of a print, such as lipstick, nail polish, small flowers, hair color, eye color, or any other small area that is surrounded by details that do not need any correction at all, or where a dodging tool might interfere with the image around the area. Using a brush of the proper size means that you could actually correct the colors in a plaid shirt, if you work from color separation negatives. This is the technique that Carbro printers used and what some top quality Dye Transfer labs still use. I have personally used this technique on many jobs that required better color rendition than the original transparency displayed. I have even brushed a sheet of clear film with such ease that I could get a background that got lighter at the top with displaying any mottle of unevenness. Granted, this takes practice. But when working with three separation negatives, the only other choice for color correction is more film and time. This technique can save both of these items. Have you ever considered the fact that with three

negatives, it is almost impossible to dodge a set of matrices in exactly the same area without getting rainbow colors where they did not meet accurately. If you "cosine" a clear sheet of film and use it on all three negatives, in register, you can lighten any area with confidence. You will not get rainbows.

**How to get a smooth contact light source.**

This is probably the most overlooked sources of potential trouble. If you are currently using a light source to expose anything in a contact frame or a contact platen, the light source may be uneven. If you are using a point light source, in either an overhead position or under the work table, check out the evenness of the light on the area of exposure. It is hard to see in the dark. Do this, instead. Expose an 8x10 sheet of black and white paper, or even an 8x10 sheet of Pan Masking film to the bare light on the table or platen. A filter is not necessary, yet. Process this sheet of film or paper and examine it carefully. Don't overexpose these sheets. All we want to achieve is a middle tone grey. After washing, even though they are still wet, squeegee these sheets and place them on a light box.

Examine them closely. If you see any sign of unevenness, you will have to do one of two things. You will either have to move your light source further away from your exposing area, or diffuse your light source. **The later has my vote.** Especially if you have the lab all built and all of the distances calibrated. The point source needs plenty of space between the bulb and the film plane. One remedy that I used back in 1946 was as follows. In order to lengthen the space between the bulb and the film, I used a mirror system.



This enabled me to extend my light source distance from three feet to almost six feet. The information supplied by the K & M company, a specialist in contact exposing equipment, says that at least ten feet be spaced between the film plane and the exposing point source bulb, otherwise unevenness may occur. I tried something this past week. I have been using a

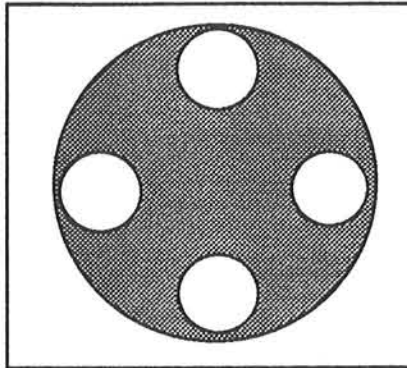
point source about three feet from my film plane. I sometimes use a diffusion sheet on my platen in order to eliminate Newton's rings. I thought that I had a very even system. I decided to test my own lighting system after a student asked me "How far away does a point light source have to be from the film plane"? When I remembered the information by K & M. I decided to find out for myself.

For the past few years, I have been teaching, and not really making prints for the advertising community. I have made prints for some of my students, but the backgrounds were usually so busy, that I didn't realize that I might be having a problem with smooth backgrounds.

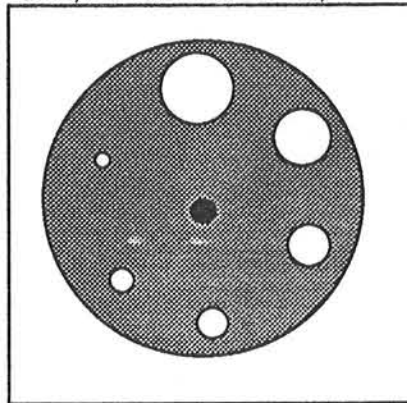
Since I didn't have the luxury of more space, I decided to place a diffused film over the exposing hole. My film developed so smooth that I could hardly believe it.

This led me to conclude something that has been on my mind since 1951, when a competitor of mine visited my lab and asked me how I got such smooth prints. I didn't really have an answer. I just thought that it was the method of enlarging that had something to do with it. When I was in N.Y. City, making Dye Transfer prints, I used a system similar to the diagram. I used a 250 watt opal enlarging bulb.

The filter wheel had three inch holes cut out of its surface.



The second wheel had 6 holes cut out of it in these percentages. The first hole was 3 inches, (100%) the second was 75%, the third was 50%, the 4th was 25%, the 5th was 12%,



the 6th was 6%.

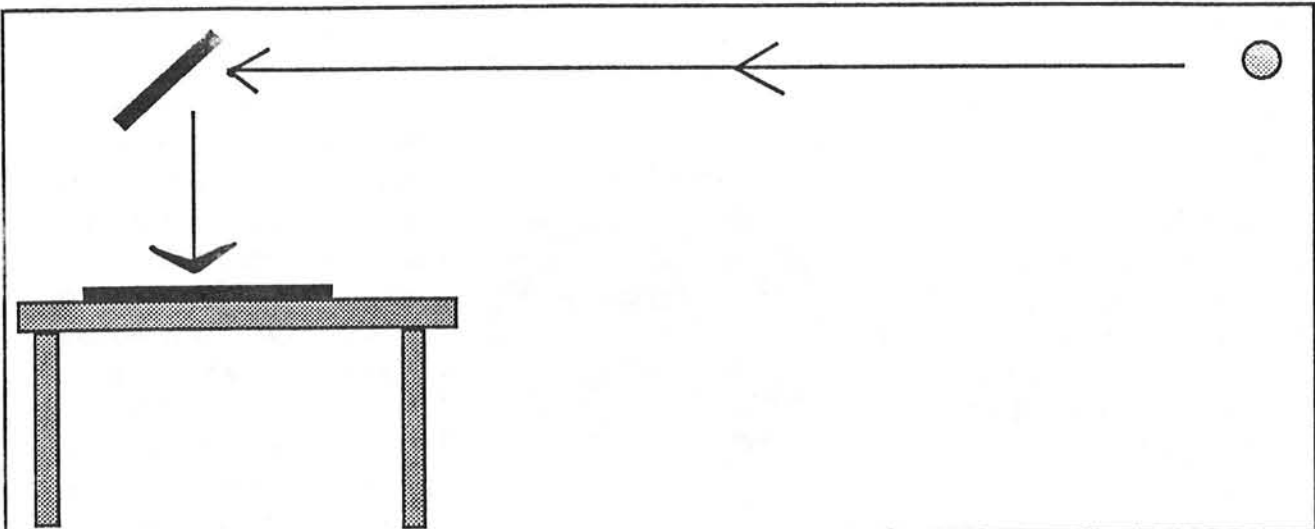
These different six holes allowed me to change the amount of light emitting from these holes without changing the color balance of the bulb.

Without realizing the great results that I was about to get, was that I had placed a small piece of opal glass in the opening in front of the exposing holes. This produced a very even light and gave me very accurate, and smooth contact separation

negatives.

I remember making prints for the Max Factor company. Some of the products that needed prints, were shots of white powder puffs shot against a light, or even white, background. Our job was to make accurate and clean prints, with a very smooth look. It worked. I didn't realize it then, but I do now. The contact light source that I used was a diffusion system and produced even light across the entire exposing platen. However, for the "sharp" enthusiast amongst us, the Gretag Company, based in Switzerland, produces a point light source that is extremely bright and is used for making contact exposed separation negatives. It produces very sharp edge effects that make any negative look sharper. The method that they employed in order to get even lighting for this system was as follows.

They placed the light source up close to the ceiling, and about 20 feet away, down the hall. The light source almost looked like a laser beam. A mirror was placed at an angle directly over a work station so that the light source would come from down the hall, bounce off the above mirror, which caused the light source to now reach the work station. A vacuum platen at this work station was used to make contact



separation negatives using a similar method such as a contact frame, but without glass.

It was impressive. All of the controls for changing filters or the light intensity was conducted right there, at the work area.

This produced a clean working area. No glass was used in the vacuum platen and Newton's rings were not a problem.

If you are not sure of the evenness of your light source, make this simple test. Make a contact exposure on a sheet of Kodak's Polycontrast paper. Process this sheet. If it looks smooth and perfectly grey, then your light source is accurate.

Then make an exposure by, first, placing a diffusion sheet over the exposing light source and than expose another sheet of paper. Compare the differences. If the difference is great, then either move the light source or diffuse it. If you can't move anything because of

the layout of your work area, then just diffuse the light source.

If you want to make a great diffusion material, purchase a box of Kodak's Translite film.

Fix, wash and hang to dry. This material has an emulsion on both sides so the diffusion is excellent. It can also be used in a contact platen to totally eliminate Newton's rings.

**Making contact matrices using lithographers contact vacuum frame.**

Using a lithographers vacuum contact frame to make dye transfer matrices.

This is not a new procedure, but one that has hardly ever been used.

The first question one may ask, is "why make matrices by contact?" and "why use such a device as a lithographers vacuum contact frame?"

The answers to both of these questions are as follows.

The reason for making matrices by contact is a good one. The elimination of flare is the primary reason. Flare is the most damaging element in photography. Research has been involved from the very beginning of the photographic inventions. Lenses have been coated and super coated, but flare is still with us. Granted, there have been major improvements in eliminating flare, but it is still there and flare still plays a very important part in making any kind of enlargement.

I have explained this phenomenon before. Let me refresh your memory. Clear film, in an enlarger and projected to a sheet of paper will exhibit all the flare possible. If we place a penny in the middle of the glass of an enlargers film carrier, and made an exposure on a sheet of paper on the easel, we would find that the white space on the resultant print was not really white, but rather a light grey. This is



caused by the fact that the light from the rest of the image would probably light up the darkroom and cause a light fog.

However, if we took this same penny and placed it on a sheet of paper on the easel, then flare would not affect the paper print under the penny and the area would remain white.

So, now that we know the cause of flare and its affect on a print, how can we resolve this problem?

The answer is to make our separation negatives by enlarging them to the final print size. They must be made with the emulsion side of the transparency, facing up in the carrier. If the emulsion was to be face down, then we would have to place the negatives In the contact frame emulsion up in order to read right, and the base of the film would be against the base of the matrix film. **Too many bases.**

All principal masks used in the process must be made by contact to the transparency. This includes making highlight masks by including them in the making of the principal masks.

This proper positioning in the carrier with all of the masks allows us to make separations with all of the information where it belongs. If the original image is a low key or dark photograph, then this method works great.

The question is, "How far

away must the light source be when making contact matrices ?" The answer is simple. As long as the light source covers the image area and is smooth. I have just explained how to make sure of that problem.

The next problem is one of register pins. Condit Mfg. in Conn. makes a pin strip with low profile pins that match the matrix punch that he produces, or the matrix punch produced by kodak. This will keep the glass from cracking under vacuum pressure.

This kind of print will astound you. I have made quite a few prints using this method.

The elimination of flare at this stage in print making is critical.

The next problem is one of exposure times and color balance. If you have included a grey scale in this process, than it is relatively easy. Make a density test on a small sheet of matrix film, then read the density differences in the middle step of the grey scale and calculate the exposures. If you want to improve the print at this time, use your eyes and imagination and make the necessary changes.

The most obvious improvements will be evident when working from a darker original. The lighter film shades in the shadow areas in the negative would be the first place to expect flare.

This is the reason that

scanners are so accurate in reproducing the dark areas in any photograph. There are no optics involved, or space in which to produce flare.

The reason for using a lithographersvacuum contact frame is because of its accuracy in developing the right amount of vacuum pressure.

I know of no better tool than this contact frame for this particular purpose.

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Using Kodak's Polycontrast paper in order to make tight cutting friskets.

The reason for using any kind of photographic image when you want to produce a "frisket" is so that you can see the edges more accurately and can cut them out with precision. The "trick" here is to develop, wash, fix, wash, and dry, in less than 2:30 minutes. The paper must not be allowed to get water logged otherwise the image would not repeat to its original size. I mention this procedure because it is a lot cheaper than using Kodalith film.

However,. you must adhere to the correct time schedule or the image will cjang size and spoil the job.

You can use register pins from the very neginning of this paper method. Then a sheet of Rubylith material can also be used, on pins too, to make the actual

frisket used to produce the "hold back" and "burn in" friskets. It is important if you are serious about tight fitting images when producing a multiple strip-in print.

The past month has been fruitful for me. My main concern every month is to make sure that the next newsletter that I write is informative and not repetitive. But every phone call that I get is usually a specific question that leads to an answer and then sometimes to part of the newsletter. If any of you needs a question answered, either call me or write to me. I usually know the answers to most questions that pertain to the field that I have been in for all these years. If the question is deep enough to stir my imagination, then it will probably end up somewhere in this newsletter.

Some of my students have been trying to find the right enlarger for their printing of Cibachrome prints or Dye Transfer matrices. If you are in a similar situation, get a copy of "Shutterbug magazine" or a copy of "Horsetrader Magazine". You will find all kinds of enlargers and lenses that will work fine. One of the best enlargers, for the money, is the 8x10

Elwood. This is a workhorse that is still easy to find. The main thing to realize is that this enlarger is just a basic shell. The light source can, and should be changed. Any kind of light source is available. Choose one. Mount the enlarger on a solid wall and build a work table under it. The rack and pinion type of focusing and height adjustments are easy to maintain and operate. I have seen these old beauties for sale for as little as \$300. Condit Mfg. makes a great registration carrier that fits the Elwood perfectly. If you plan to make your prints from 4x5 transparencies or separation negatives, then a whole field of enlargers is available. From the old workhorse, the Omega D 2 to the newest Durst. There are plenty of choices. Make sure that you investigate the availability of registration carriers. Some manufacturers make registration carriers for their own brand of enlarger. (Durst is one of them) However, Condit can advise you on the proper enlarger for the kind of work you plan to do. In fact, he has recently finished a special enlarger that is a complete system for doing "Comp" work. This includes the timers, vacuum easels, the backlit easel and all of the registration equipment needed for this kind of printing.

The only thing I can really advise you on is whether or not the price is too high for any kind of equipment. You must know by now, that I am a great believer in getting the correct tools for the job you are planning to do. The worst thing you can do is to be concerned about your tools when you are working on a complicated project and have your mind distracted by the wrong things.

Here is the latest news flash about the most completed video and book. I hope that I can mail out the order forms and information about this important venture of mine, before the next newsletter appears. The order forms will include a list of the articles that I will cover in the book and video. It will be most complete. In the meantime

The book "the Art of Photo Composition" is still available for \$50 per copy. The back issues of my newsletters are available for \$4. ea. And if you haven't yet subscribed to this newsletter and would like to, the price is \$60 per year.

**Thanks,**

**Bob Pace  
13900 Trinidad Dr  
Victorville, CA 92392**