

KEEPING PACE

A Monthly Newsletter Devoted to the art of Darkroom Photography

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The Growing Interest in The UltraStable Process

From where I sit, the UltraStable process is growing in popularity. I have been receiving many calls and letters from interested readers of my newsletter after my recent issue in which I described my feeling about this incredible new process.

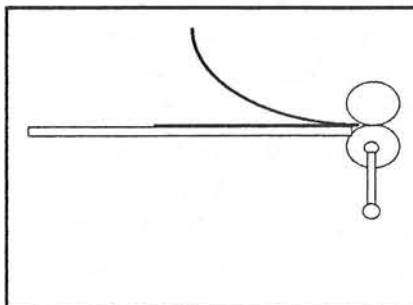
Most wanted to know the mechanics that are involved. How to set up such a process and what the cost would be. I will answer all of these questions as we go on. Let us begin by saying that the resemblance between this new Carbon process and the old Carbro process is very slight.

The old process was unique in it's own way, because the use of "bromide" print was the key element in producing the color image.

After a set of black and white paper prints called "bromides" were exposed

and processed, we had to make sure that the color balance was accurate between the images by careful examination of the "bromides."

When we were satisfied that the color balance was correct, we then sensitized the appropriate corresponding sheets of color pigments in a special formula, then combined the black and white prints and pigments through a roller system that looked similar to a set of wringers on an old fashioned clothes washer.



The three sheets were combined and set aside for 5 minutes.

Then we peeled the prints from the sheets of pigment, soaked the pigments in ice cold water, and squeegeed them emulsion down to a sheet of clear celluloid, or plastic.

These three sheets of celluloid were then placed one at a time, in very hot water, with the pigment sheet on top.

After a short while, the color of the pigment would begin to ooze out from the edges and eventually, we could peel the entire pigment sheet from the celluloid. What remained on the celluloid was a blob of color, which would eventually become an image as we washed the image continually. This was done for all three colors.

This first part of the process was easy. The rest of the process was difficult.

We began with the "bromide" images facing the correct way. After transferring it to the celluloid, it became flopped.

In order to make the print read right again we must use a temporary support paper on which we can assemble all of the colors, then transfer this image to a final image to make it correct.

Read the preceding two paragraphs a few times and you will eventually understand why the new system is so much simpler

A sheet of very thin paper with an easily soluble gelatin is used as the temporary support paper. A temperature of 80° F. would dissolve the gelatin emulsion. The paper is soaked in a tray of cold water until it is limp. Then it is placed over the Cyan image on the sheet of celluloid, emulsion to emulsion, and squeegeed into position.

After removing most of the water, this combination is dried slowly and carefully in a slightly warm area.

Eventually, the temporary support paper would "ferrotype" off and the image will have transferred to the temporary support paper. Then the magenta is soaked in a tray of cold water until it is limp, and placed over the cyan image. You can see both images through the back of the celluloid. The flexibility of the support

paper allowed you to push and pull the images into register. Registration was easier if the celluloid was bent and held that way with a wire.

After careful registration, (by eye) and with correct squeegeeing, the image would remain fixed into position and ready for drying. This combination is also dried in a slow warm area.

The paper would again pop off "ferrotyped" and the ritual was again repeated with the yellow.

When the paper would again pop off with the last color implanted on it, it then was soaked in very cold water until limp, and then placed face down on a sheet of final support paper (usually double weight paper with a thick gelatin emulsion, but containing no silver.)

After these two sheets were combined, they were covered with weights, books, and anything else to hasten the image into adhering to the final paper.

After a time (usually 30 minutes) the combination of temporary support paper and the final paper was placed into a tray of hot water, and the temporary support paper would dissolve, leaving the final and righted image on the final support.

A short rinse in hot water eliminated any residue from the support paper, and the

print was dried with warm gentle air.

That was it.

The new system has a much simpler registration method and is easier to complete a print rather quickly.

All of the pigments are pre-sensitized, then dried and placed into a box. The sensitizing allows the pigment to be hardened with an exposure to an ultra violet light source.

The material used for coating the pigments is a stable polyester sheet of film. (7 mil.) The material that accepts the image is similar to the base for Cibachrome. That's it.

No other materials are needed or necessary.

There is no need for the black and white paper prints. Instead, scanned and sized screened separation negatives are contacted onto the pigment sheets via the use of an ultra violet light source, and vacuum system, such as those found in any litho company.

Since the sheets are stable, we can punch the sheets, the negatives and the receiver sheet with a matrix punch (or similar system) and registration will be automatic and simple.

Each pigment is exposed, soaked, transferred and hot watered in turn until the entire image is on the final sheet.

It is a fast method and it works every time, unless you are a klutz.

The only concern that I had was for it's control.

As you know, I was raised in the Dye Transfer business since it's inception.

The use of corrective controls is what makes this great process as good as it is and why it is still the unquestioned process of the professional.

The chemical controls that can produce a lighter or darker print, or making subtle changes in contrast, going up with one or two colors, and at the same time going down with one or two colors.

I could actually write a fairly lengthy newsletter just about the controls that can be used in making a Dye Transfer print. Some day I will.

The simplicity of the UltraStable process had me concerned because of the lack of all of the aforementioned controls.

How this one aspect has been solved?

One of my readers mentioned the fact that he was planning to make a quality C print from one of his color negatives, then purchase a Microtek Scanner, and scan the image at a 600 dot per inch resolution, and using an Apple Macintosh 2 FX computer, place the image on the screen and using Photo

Shop, or some similar software, correct the image, save it to a disc, and then use the services of a Linotype service company, have them make a set of screened separation negatives and then make an UltraStable print.

This sounds pretty good, but I question the ability of a relatively inexpensive scanner to capture the image with all of it's color and detail. I am not sure.

If it works I too, will be in the market for such a system. There is a better solution. Instead of sending your precious transparency to a scanner house, and hoping that his eyes and yours are in tune, and hoping against the possibility of having to send the image back because the effect you were after is not there. **Why not send him your finished color print.**

This simple approach is what **Joe Holmes** is up to. Here is a photographer that has been making his own prints for many years. I have written about his approach to the ingenious light source that transforms his color images into **COLOR** images.

Joe can make his prints to match the mood and excitement to the exact density and contrast range he desires. His color balance is his own. The prints he pro-

duces via the Cibachrome method are unique and exciting.

He is seriously thinking about setting up a space in his lab for producing UltraStable prints. He will simply send his finished work of art, a Cibachrome print, with all of the dodging and burning and colorization techniques at his disposal, to a quality scanner house. There will be no concern about what light source was used for viewing the print at each location.

Once the negatives have been produced and proofed, they should just about match the original print.

The advantage here is that the corrections are done before sending the image to a scanner house.

Joe will have all of the control.

My original thought was to possibly send the transparency to a scanner house, place it into a work station mode, (at \$400 per hour) and then produce a new transparency.

I like Joe's idea much better. This will enable anyone that has the skill in producing either a Dye Transfer, Cibachrome print and even a C print. to make the print until he or she is really satisfied with the result, than get it scanned.

Imagine the making of a stable print with the flexibility of a Dye Transfer print?

What kind of equipment is available for this process?

It begins with a special kind of light source. The new UltraStable Carbon tissue is sensitized in such a way that only an ultra Violet light source can harden the image sufficiently in order for the process to work.

These light sources can be made by anyone talented to work with simple tools. In fact, in Louis Nadeau's book "Modern Carbon Printing" a detailed explanation of how to build the light source is found on page 69.

This book is available from Light Impressions, Rochester, NY. suppliers of books and archival products for the fine art photography trade. Any **Graphic Arts** supplier can show you a complete list of the different kinds of light sources available for such a project. An ultra Violet light source is used to expose the printing plates, and also various methods of color proofing systems.

In California, there is a publication called, "Horse Trader" that has many pages that lists, used and new, printing trade equipment. I have seen plate makers for sale for as little as \$400., including the vacuum system.

A vacuum system is a must. There are a few ways approach this need. If you purchase a simple 20x24 vacuum frame including the pump, (brand new,) it may

cost about \$300. The light source could be purchased separately.

A used vacuum frame used by the litho field can possibly cost less.

The current pages of "Horsetrader" lists about 15 such devices.

Check out the supplier in your community.

They light sources should be even in light distribution, and be supplied with a light integrator which keeps track of the fluctuations and keeps the light level accurate throughout the exposure time.

Of course you should have a film punch. **Condit** can supply you with the correct size. So will any graphic supply house. And don't forget the pins to match the punch. These will be used on the platemaker as well as the roll out area when registering the various pigment sheets to the final support.

Do you need to roll the image together? Is this done by hand, or can it be motorized?

My experience tells me that rolling the pigment sheet onto the receiver sheet is similar to the method used with matrix film and the Dye Transfer process, and should be the easiest way.

However, others prefer to placing it on pins and letting it down and squeegeeing it immediately.

You may have to try this for yourself. Practice with blank sheets of film and choose a method for yourself.

Can the combining of the pigment and final support be motorized? Of course it can. But I personally believe that it is a simple matter to make prints as large a 20x24 with little trouble.

If you plan to go as large as 30x40, there is a simple method.

Years ago, Condit Mfg. produced a device for me that enabled me to transfer 30x40 matrices with a flick of the wrist.

The unit consisted of 2 sets of geared tracks, a large heavy geared roller that rode the tracks, and a second set of glides that the geared tracks sat in.

The entire system as placed on a large sheet of granite. The registration pins were placed into the granite, and the tracks were fastened to the outside area, beyond the width of the matrix film.

The entire system was placed with the front end being higher than the far end.

After the matrix film was placed on the pins, it was kept apart by holding one end of the matrix high. A simple flick of the wrist started the heavy roller on it's downward path in perfect alignment and with equal pressure along it's entire

run.

Another flick brought the roller back to its original starting place without touching the combined sheets again.

This simple device was perfect. Thanks to Condit.

How much room does this system require?

In order to make 20x24 prints, and have room to move around and not feel cramped, a 12x18 room would suffice.

The material is exposed, soaked, transferred, washed off, and eventually dried. Drying is important. The transferred image must be totally dry before the next image is soaked and combined with the previous image.

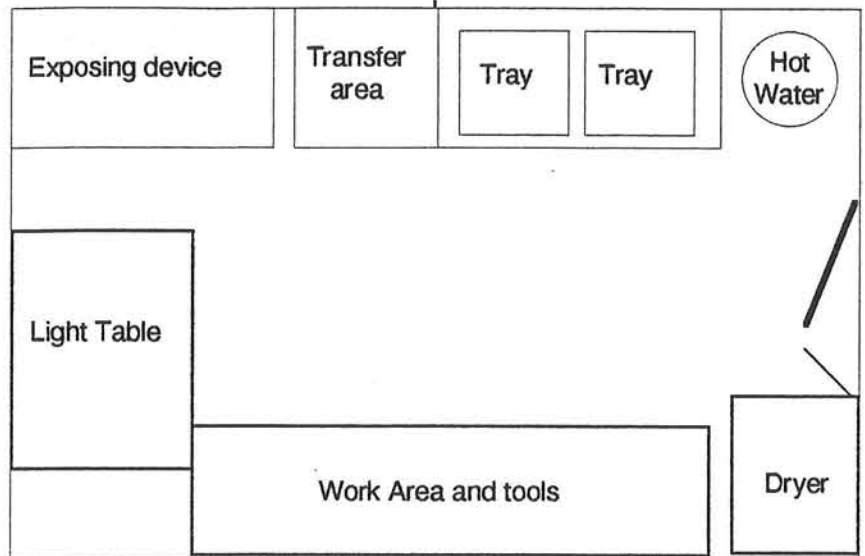
My idea for a good dryer is to build your own.

Warm gentle moving air is the best way to get the entire sheet dry without producing distortion.

Can you coat your own materials?

Of course you can. It is a relatively simple procedure. Louis Nadeau's book explains this procedure.

The squeegeeing system used in today's silk screen industry produces a squeegee that can coat a sheet to the precise depth that is necessary. You can build your own coating machine, But if you want the same kind of repeatable quality



and high quality pigments, I would buy them from the UltraStable company.

Do you need screened negatives?

The fact that the dot used in the litho filed is a solid thick dot means that a high density is achieved with each dot. If the negatives were made using continuous tone methods, the very light areas would consist of very thin layers of pigments and could be susceptible to fading.

Continuous tone negatives could be used. If you plan to use your own enlarged negatives, then only three colors are necessary. But you had better be sure that all of the pigments are transparent. This is where the Dye Transfer process is more accurate. The blacks do not depend on a separate printer, but simply on the photographic combination of all three of the primary dyes.

Is there much control after the negatives are made?

If you use Charles Bergers pigments, the answer is a resounding yes.

Dodging and burning can be done by using cut out sheets of Rubylith film which are placed on pins, and placed over the area to be corrected.

Making an area light doesn't work as well, as when making an area darker.

This means that a test print should be made of a smaller portion of the image and corrected in exposure if necessary.

I have even made 3M color key proofs with accuracy, except that subsequent correction is not available with this system.

The inventor, Charles Berger has not been sleeping during this evolution of this process.

He has steadily searched and experimented with

different pigments and has found new combinations that are even more colorful and accurate than the previous pigments. As a result, the colors in the print are more pure than before, and the life of the print is still archival.

Finishing the print.

Spotting is done in the usual manner. Light specks are covered with the missing color or colors. I would use the actual pigments. Small pieces of the sheets pigments could be used by placing them in hot water to soften the emulsion. Use a fine brush and warm water to dissolve some pigment, and spot the print. Dark areas could actually be etched, or a small touch of acrylic paint could be used to cover a dark spot.

Will you be able to find an appropriate gallery that wants to handle this kind of process?

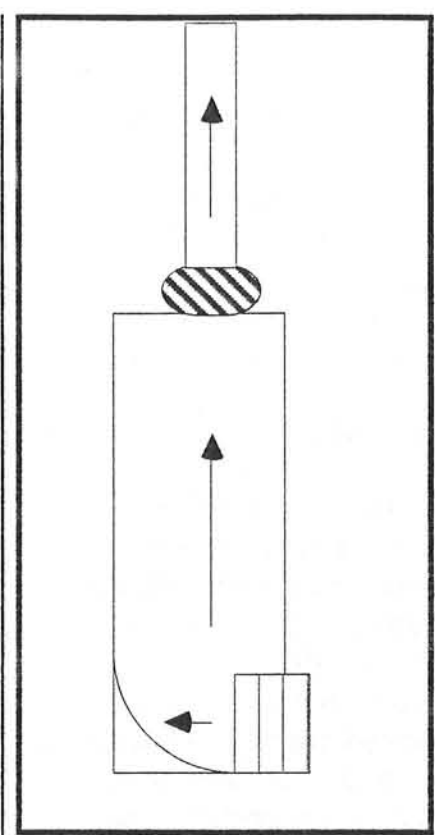
The answer is "yes, easily." The system works as follows. The first thing the gallery owner wants is a recognized name that has a following. Usually the prints are in black and white. As soon as color prints are introduced, the name is still important. Elliot Porter's works in Dye Transfer will have a high place in museums and galleries for some time to come. C prints do have a limited

audience, but I know of a few people that have outstanding C prints and I am trying to convert some of them to the Dye Transfer process. They do so much manipulation when producing a print, that making a set of scanned negatives from their color negative may not be sufficient enough to meet their standards. But, if a set of scanned and screened negatives were made from their already manipulated images, they would have the best of both worlds. Their own printing skills would remain intact and would not be overshadowed by a scanner.

The price for such work.

I have seen gallery prices as high as \$6000 for a 20x24 UltraStable print. It depends on the name of the artist. If the work is outstanding, the name will not be long in reaching the art audience. The price you ask for your work is your own business. As a former business man, I know that I first had to prove my ability and skill before I could demand the higher price.

This is a perfect system for producing limited editions of a specific work. The price will continue to escalate as the years go by, especially if you gain recognition as an artist.



A simple dryer like the illustration above is all that is necessary for drying the delicate gelatin pigment images. Warm air produced by a simple room heater, and a small blower at the top of the unit to remove the air from the box.

Use a duct and take the warm air out of the building.

There are other printers who are involved with the Carbon process but are using different pigments. The formulas for these pigments are also found in Louis Nadeau's book, "Modern Carbon Printing."

William Nordstom, at 576 Powers Dr. Eldorado Hills, California is presently making UltraStable prints for anyone. Top Notch.

Most photographers want to make their own prints, but few are able to. If you are not able to spend time or money on equipment, then a quality firm such as Nordstrom's should be contacted. If you are interested in contacting William Nordstrom, Call 916-933-3403.

There are others that use their own pigments and formulas and are basically producing their version of the old Carbro process. **Rene Pauli** of San Francisco is getting rave reviews around the art community for his beautiful Carbro prints. His background in the Dye Transfer field has made him a top notch color printer. **Reece Vogel** of Los Angeles bought out all of the McGraw Colorgraph systems, which includes a coating machine and all of the peripheral supplies connected to this old process. He only make prints of his own work for his own business.

There must be others throughout the world that are still turning out beautiful images and doing it all by themselves. My interest in the process is to make prints from various kinds of originals so that I can examine the steps involved and try to discover better methods of determining the correct contrast and color balance of each work.

Finding the service company that can provide you with the necessary screened separation negatives shouldn't be that difficult. Make sure that they use a "fine" scanner like a Hell scanner.

The resolution must be somewhere between 300 and 400 lines, otherwise the screen will be evident. I plan to make a 16x20 print in the very near future from a beautiful 35mm transparency.

When I do, I will write about the procedure I will be using and show you some of the steps by taking photo's of the procedures and the kind of equipment I will be using.

In the meantime, for the rest of us that are still involved with the making of color prints without the use of pigments or scanners, the methods for producing quality Dye Transfer or Cibachrome prints is still with us.

The advantage of making large separation negatives to the size of the print is a great way to make a print and eliminate most of the flare that is almost totally ignored by most of us.

Try this the next time you are making a print from a small original.

Use only one color filter. Either the red or green, or if you insist, a combination of both. Make one enlarged negative. Then make a contact print from this

negative on a sheet of Polycontrast paper until it looks just great. Use the enlarger as a light source. Then place this negative in your enlarger and make a print without changing the paper grade with filters. If you started with a good transparency that had lots of dark areas with detail, examine the two prints. You will see where the shadow detail in the first print will be much greater than the second print.

The reason should be obvious,. The clear areas of the negative, (the shadow area) will spread the light all over the room as you make the exposure on the easel.

If you make Dye Transfer prints and Cibachrome prints from the same original. examine the dark areas that have minute detail in the shadow areas and notice the difference in the amount of detail captured by the Ciba print as compared to the Dye Transfer.

I learned this lesson the hard way. I once had to make a print of a small silver skull against a black vinyl background. The original was shot in 120 film, and the final print size was to be 16x20.

I made enlarged separation negatives. The negatives were accurate. I made a set of matrices and pulled my Dye Transfer print. The skull was fogged over and lost it's snap.

I was desperate, so I made the negatives over by contact, and the negatives still looked great, but the image was still fogged over. Not to the point that you could say it was fogged, but the prints looked dull.

This was before Ciba. This would have been a cinch for Ciba because it's reversal system would not allow the blacks to flare.

I spent so much time on this job, that the client had a fit and took the job back and went to an engraver to finish the job.

What did the engraver do that I didn't do?

He made a dupe transparency to the size of the final image, and made contact separations and contact plates. No Flare.

The new scanners do an even better job than that because there are no optics involved, at all, with scanners.

Later on I realized the problem, so whenever a job came into the lab, I would evaluate it and decide if it needed to be enlarged to size of the print, or not.

I once had to make a print of the interior of a piano. The 8x10 transparency looked to be about 95% black. I used my Durst enlarger to make the enlarged separation negatives. I used 10 inch sq. separation filters above the image so

that I could make the exposures without anything interfering with the optical quality of the image.

It took a while to establish the exposures and developing times to make a good set. I finally got the negatives made, and the print turned out great.

I used a vacuum contact frame and a point light source to expose the matrices.

Detail was everywhere. The piano wires consisted of more than one wire and the wound strands were perfect in detail, as were the little white felt hammers.

The print was so great that this method of production was to be used many times thereafter.

I never told the clients what I was up to. I just delivered prints that were open and detailed and this is what they expected.

The negatives had to be exposed fully so that none of the wanted detail would be lost.

This is one of the reasons that I have employed a system called "Average Density" for the past 30 years.

All of my original transparencies were read through a densitometer and evaluated to be of such a density.

If the overall density was higher than my test originals, I increased the exposure depending on the difference in overall average density.

Some times the differences were very great, and sometimes they were just slight, but nevertheless, I placed the image detail on the straight line area of the negative material.

I have never delivered a job to a client and had him complain about the lack of detail in the shadow area of a print.

Did I stumble on this problem at the early part of my career? No way. I had to pay the price of learning. There was no one to turn to.

But now there is. Me.

If you need to improve your overall quality of your work, in Dye Transfer, or Cibachrome, contact me. I may have the solution for you in one of my publications. Call me on the phone if you must, but not too late at night or too early in the A.M.

I still have my books and videos available.

The Dye Transfer package is \$200. plus \$12 for handling and shipping.

The Cibachrome package is \$100 plus \$12. for handling and shipping

The book, "The Art of Photo Composition" is still \$50. plus \$3. for handling and shipping.

Thanks again.

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