New approach to the photo-silkscreen method| the lamination lift

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A NEW APPROACH TO THE PHOTO-SILKSCREEN METHOD;
THE LAMINATION LIFT

by
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B.A., University of Montana, 1967

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[Signatures]
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In the process of learning the various techniques of printmaking, one becomes acquainted with a number of methods in each discipline, as well as their origins, principles and history of application. These are the basic tools and principles by which the student may begin to manifest the images of his conception.

He must practice these skills to free the channels between the mind and the material derivative. The skilled typist or pianist has paved a smooth road from thought to expression. The transfer becomes almost mystically direct. The manual process is integrated into the whole.

The only limits imposed upon a student's capacity fall into two categories; outer-directed and the contingent auto-directed or self-motivating. One learns, given the self-motivation, to the limits of his informational environment, his teachers and fellows around him. When these resources are exhausted as outer-directed forces or input, progress will cease until new problems arise and one is forced to move to self-motivated search for solutions. As the problems come before the solutions, real learning begins.

As a student of photography and the commercial graphic arts as well as printmaking, the author fit readily into the silkscreen area of printing where the techniques of photography
and the graphic arts can be utilized with the photo-sensitive gel stencil process. These techniques in combination with standard non-photo methods of screening present endless possibilities. It should be mentioned that the solitary use of the photo stencil would be inconvenient and expensive if not very limiting.

The technique of the photo-sensitive gel is based on the principle that whenever a certain amount of light (especially ultraviolet) falls upon the sensitized surface of the gel, it will cause a reaction which, when treated with a developer, will harden it. Where no light or substantially less light (the blocked out areas) reaches the gel, the area can be washed out easily with warm water leaving the hardened areas unaffected, thus producing a positive printing stencil when embedded in the screen.

Generally, the most convenient way of applying this gel to a screen is with a commercially prepared acetate backed film which is exposed, developed and washed out with the acetate backing retaining the gel so it can be pressed into the screen where it dries and the acetate peeled off.

Any manner of blocking out light to the film will produce an image. This opens up all the doors of possibility in this respect. Even a half-tone dot or texture screen will print well to the limit of the screen mesh. This many forks in the road present many more problems than solutions, however, leaving the student on the doorstep of discovery.
The problem dealt with in the following pages originated in a search for iconologically significant images in the printed commercial magazine medium for their application through combination and appropriate alteration to the photosilkscreen method. The problem was soon narrowed to the retrieval of these images in a direct and usable form.

Several paths to the solution were considered. One was to photograph the images and blow them up on photographic sheet film used for large transparencies in the commercial offset litho process. This was discarded as it is impersonal, indirect and quite costly if the work must be sent out to a commercial shop. The search was for directness, convenience and low cost. The next was the use of 3M copier which produces a transparent copy of unacceptable quality, but not without possibility. Drawbacks to this method are the indirectness again and cost; about fifty cents for the limiting dimensions of 8½ x 11 inches.

The search narrowed to finding a method of using the actual printing ink on the printed matter. The next thought was to attempt a popular method used in collage and sundry decoration: the application of several layers of acrylic matte medium and the subsequent removal of the paper with vinegar and water. It was a total failure. The film of acrylic was too weak to maneuver with ease, and even when applied as a transparency, yielded poor results due to the density of the medium.
At this point a brief consultation with the Instructional Materials department of the local library produced what appeared to be the solution. Transparencies for overhead projection are sometimes made by a process they call "lamination lift." This is accomplished by applying a laminating film, generally used for protecting documents, maps, etc. to the printed matter and soaked for about fifteen minutes to remove the paper. It was also noted that although most any printed matter will eventually yield its print with prolonged and careful sponging, the most favorable material is a coated magazine stock. Most magazines that run full page color pictures use a clay coated paper. Newspapers are almost hopeless as a source. The advantages of this process are immediately apparent when the stated requisites are considered. The film cost is only ten cents per square foot, and the process of applying the film is simply an ordinary iron. A laminating press can also be used, but is often quite inconvenient for eliminating bubbles, and access to one can be a problem. This method is also ultimately direct as the print off the paper is used.

A stock of laminating film and a stack of Look and Life magazines gleaned from the basements of helpful neighbors, and half the problem appeared solved. The other half was obtaining a workable transparency. Ironing out the small bubbles became the laborious part of the chore. The print doesn't pick up where the film isn't adhered. There seems to be
possibility in this effect if it can be controlled.

After a couple of experiments with soaking, it was discovered that the addition of vinegar reduced the time to about four minutes. In addition, it was found that after the paper was removed the clay coat had to be sponged off to clear the transparency.

The next step was to see how well it produced a stencil. As the film was quite thin, it was mounted on a heavier piece of acetate to facilitate handling, and exposed to the photo-gel. The stencil washed out perfectly, and the first pull of the squeegee told a success story.

The show could go on as the solution had been found and was ready to be put to work and to be passed into the information media for the benefit of others.

The following pages are illustrated to demonstrate some of the methods and techniques which evolved from problem solving during the application of the "lamination lift." It is hoped that it will be of value to those who wish to expand their store of tools to include this versatile photo-silk-screen technique. Those wishing a source of informational material on silkscreening should refer to the accompanying bibliography.
II. THE LAMINATION LIFT METHOD

Fig. 1 Materials. Laminating film and coated magazine material with iron and knife accessories.

Fig. 2 Lay film over area to be lifted with dull side of the film towards the paper, glossy side up.

Fig. 3 Flatten film and tack it in the center of the desired area with the iron set at SYN or 250°F.

Fig. 4 Cut out the area with the laminating film together.
with the paper. This makes the job of ironing much easier as the film will stick to anything under it if it overlaps the paper. Take care not to touch the iron to the dull side of the film as it will also stick to the hot iron.

Fig. 5
Iron on the film making sure to eliminate any bubbles and/or wrinkles.

Fig. 6
Soak the laminated paper in vinegar or water with 5% acetic acid added until paper separates, leaving the film with the ink adhered. Removal of a dull, whitish coat of clay residue may be done with a sponge and water.
The prepared transparency is quite thin and tends to curl. This necessitates mounting onto a heavier piece of clear acetate for facility in handling. This should be done with Scotch Magic Transparent Tape, as it doesn't interfere with the image during exposure. To avoid reversing the image mount on the acetate with the dull side up. (This side will go next to the photo-gel film when exposed.) The transparency as now mounted can be handled as any transparency used for making a photo stencil.

The transparency ready to use.
III. MAKING THE PHOTO-SILKSCREEN STENCIL

Fig. 9

Materials. A 250 Watt sunlamp (or 275 Watt), a sheet of glass big enough to cover the size of film to be used, and a flat illustration board or felt backing. Ulano Blue Poly-2 is the recommended type of photo-gel film.

Fig. 10

The exposing frame and lamp setup. The lamp should be approximately 20" from the film to insure coverage of a 20" x 20" area.
Fig. 11  The screen should be in its hinges over the build-up in the intended printing position, and stops set up with a sheet of printing paper (or a proof with which the new stencil is to be registered) in place before the film is exposed. The screen must be clean and dry for the gel to adhere properly.

Fig. 12  Lay or tape the transparency on a clean cutting area with the dull side down and overlay a piece of photo film EMULSION* SIDE DOWN on the transparency. Holding it firmly cut the film larger than the image on the transparency to provide a convenient mask. The image can be seen adequately through the film for cutting purposes. It should be noted that one must avoid prolonged exposure to interior lighting as it will affect the film over a period of hours. Sunlight must be avoided due to its high ultraviolet content.

*The emulsion side will feel tacky to a wet finger (dull side on Poly-2).
Fig. 13 Place the transparency, dull side down (to avoid reversing the image) on top of the film in the printing frame beneath the bulb. IMPORTANT: THE FILM MUST BE EXPOSED EMULSION SIDE DOWN. The light must pass through the transparency (which will appear as reversed in the frame, but will print correctly when screened) and through the acetate backing of the film. The emulsion is on the bottom.

Fig. 14 The setup in action, the film being exposed.

EXPOSURE PROCEDURE: With the glass holding the film and transparency sandwich tightly and all dirt or dust removed from area to be exposed, cover the glass with opaque paper, turn on the lamp and let it warm up for about 30 seconds. A "click" will be heard and a change in the light can be seen when the filament begins to emit ultraviolet light. Remove the paper and expose the film for the proper time (four to five minutes).

To avoid washed film and time a test strip should be run with the transparency to determine proper exposure. To do this follow the described procedure with a piece of scrap film exposing it for three, four and five minutes on the same piece. Block out 2/3 of the piece with opaque paper for one minute, 1/3 for an additional minute and remove it for the remaining three minutes. This will give
exposures of five, four and three minutes respectively on the test strip. The correct exposure will be evident when the following steps are followed.

**Fig. 15** Preparing the developer. Before or during exposure the developer should be prepared by adding first the "A" and then the "B" packet of HI-FI Prep photogel developer to the same 16 ounces of water at not more than 70°-75°F. and dissolving thoroughly. A mayonnaise jar with lid is a good container. (Contrary to the fable on the label, it can be stored in a dark place under tight cover and re-used for about two weeks. However, do not let it stand in the developing tray as air and light do affect it quickly.)

**Fig. 16** When exposure is finished place film EMULSION SIDE UP in a developing tray of sufficient size and cover with developer. Agitate and insure coverage by the developer for 1½ minutes. This can be done by hand as it is harmless to the skin.
Fig. 17
Remove film from tray and lay it EMULSION SIDE UP on a surface where water can be drained easily. (A cookie sheet in a sink will do.) Avoid touching the area near the image as the emulsion will rub off easily at this point. A keeper such as a clothespin or a bulldog clip may be used to keep the film from sliding during the washout.

Fig. 18
Use a spray nozzle of any sort and preheat a light spray to about 100°F. and begin washing the emulsion side. After a few seconds the color will begin washing out of the areas where light was blocked out during exposure. When all the image has washed out that is going to wash out, no more color will be seen running off. To finish this process change to cold water and rinse for a few seconds.
Fig. 19 Taking the film by the corners or edge and making sure it does not fold over on itself, lay it on the paper or proof in the printing frame in register with the area to be printed. THE EMULSION SIDE (which was just washed out) MUST BE UP.

Fig. 20 Lower the screen onto the film which should still be quite wet.

Fig. 21 Using newsprint or paper towels, press the screen in...
the gel, changing the paper as it absorbs water through the screen. DO NOT MOVE THE PAPER, but firmly run the palm or side of the hand across the paper. Moving the paper rubs out the gel.

Fig. 22 As no more water is absorbed and the gel has been pressed firmly into the screen, the screen can be removed from the hinges to dry. This takes about forty-five minutes or fifteen to twenty with a good fan as shown.

Fig. 23 When the film is dry remove the acetate backing by peeling from an edge or a corner very slowly to avoid pulling pieces of gel with it.

Fig. 24 The screen when replaced in the hinges is ready to be masked and printed. A convenient mask can be made from butcher paper or newsprint and attached with masking tape.
IV. ILLUSTRATIONS OF PRINTS INCORPORATING THE PHOTO STENCIL AND LAMINATION LIFT PROCESSES

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Ill. No. 3. "Earthrise." 1970. Derry King. 17" x 29"
Ill. No. 4. "Hat" or "Red, White and Blue." 1970. Derry King. 18" x 25".
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