

Tamarind Technical Papers

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LITHOGRAPHIC TRANSFER PAPERS

Alternatives and Procedures

by John Sommers

But there is another manner in Lithography where the drawing or writing . . . is made on paper, and is transferred from thence by artificial dissolution to the stone and printed from it. This manner is peculiar to the chemical printing, and I am strongly inclined to believe, that it is the principal and most important part of my discovery.—*Senefelder*.¹

ONE OF THE SIX “elevated manners” of lithography according to Senefelder, transfer lithography has been since the earliest days of the medium an essential technical process in the workshop. A diversity of transfer techniques from complete drawing, to collage, to development of the image is crucial to the work of many artists. Stone-to-stone techniques are invaluable when a stone cracks or is otherwise in danger, or when a plate is exhausted.

But there is a flaw. The transfer method can never be better than the transfer paper itself, including its coating. Every lithographer who has made transfers is aware of the problems that are caused when a paper adheres to the printing element, then layers away, down to a coating that sticks like glue. Equally frustrating is the effect of improper storage of paper by a supplier or its disappearance from the marketplace. These problems will be familiar to all who have used Charbonnel *glossy* transfer paper or the stone-to-stone paper known as *German everdamp*. The *glossy* paper is notorious for over-adherence to the stone or plate, particularly to aluminum, and, according to reports received by Tamarind, the highly useful *everdamp* paper is now no longer made.²

Before further discussion of specific characteristics of transfer papers, it is necessary to clarify some misunderstood terms. It is common to hear Charbonnel transfer paper re-

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JOSEPH RAFFAEL. *Island Magic* [T 75-134]. In this eight run lithograph the artist made seven transfer drawings using solvent tusche on Charbonnel transparent and glossy transfer papers. Three of the drawings originally transferred to stone were subsequently re-transferred to zinc plates using German everdamp, stone-to-stone, transfer paper.

This article supplements Chapter 8 of TBL, pages 227-53. Re-reading of that chapter is recommended as background for this discussion of transfer papers and procedures.

In art, progress does not consist in extension, but in knowledge of limits. Limitation of means determines style, engenders new form, and gives impulse to creation.

Georges Braque, 1917

DESPITE OUR DEVOTION to publication of recent research in lithographic processes and techniques, we occasionally shudder at the sight of new lithographs in which complex processes have been piled one upon another in meaningless redundancy. During the 1950s and continuing into the 60s and 70s we all became familiar with the "College Art intaglio print": a pastiche of Hayter and Lasansky incorporating every possible variant of engraving, aquatint and soft-ground etching in a jumble of tones and textures. In their repetitive use of technical clichés, the medium had become the message, and however brilliant in execution, these prints soon came to bore us. By comparison, the lithographs of the 50s were simple in technique. As we look at the catalogs of the Cincinnati biennials—discussed with Gustave von Groschwitz in this issue of TTP—we are struck by the forthright and economical use of color in the lithographs of that day. This was still true in the early 60s, although gradually, as the printers at Tamarind, ULAE, Gemini and other workshops gained in skill and knowledge, more and more complex processes became available to artists. For some, these processes were indispensable to their aesthetic statement and hence fully justified. One thinks of the virtuosity with which Arakawa used the split-fountain, "rainbow roll" in his suite, *No! says the signified*, printed at Graphicstudio in Tampa, of Jasper Johns' work at ULAE and Gemini, and of the recent lithographs made at Tamarind by James McGarrell, Nathan Oliveira and Deborah Remington. In all of these superb lithographs the technical means employed by the artists were at the service of their intentions, never dominating their content, never becoming ends in themselves. But all too often, as we visit a large juried print show or browse through a catalog, we are struck by the fact that the clichés of the 50s have been superseded by new clichés in the 70s, no less hackneyed than those replaced.

In 1910, cloyed by acres of academic "machines," the Futurist manifesto demanded "the total suppression of the nude in painting" and called for us "to sweep from the field of art all motifs and subjects that have already been exploited." A half century later we find ourselves similarly palled by countless lithographs in which rainbow rolls are used without purpose, in which Rauschenberg's trademark—the pencil-rubbed transfer—is mindlessly appropriated, or in which photographic processes are pointlessly exploited.

The fault, of course, lies not in the technical virtuosity that has been developed since 1960, but rather in the use too often made of it. Academic artists have always sought to camouflage the emptiness of their statements by demonstrations of skill. What is needed is *restraint*: a determination to indulge in technical complexities only when they are justified by aesthetic necessity. We should heed strictly Matisse's admonition: "Everything not useful in a picture is detrimental."

Clinton Adams

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Editor: Clinton Adams

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References to TBL in articles and footnotes are to *The Tamarind Book of Lithography: Art and Techniques* by Garo Antreasian and Clinton Adams (New York, Abrams, 1971).

Photo Credits: Page 87, courtesy Gustave von Groschwitz and the Cincinnati Art Museum; page 92, Kent Thomas Rush; all others, Kim Jew.

Addenda

CAVEAT EMPTOR: The price of stone, included in "Caveat Emptor," TTP 6, pages 75-76, were adjusted for comparison. Prices of individual suppliers were calculated by the cubic inch to adjust for differences in size and thickness. Estimated shipping charges were included. TRACING GELATIN: Antonio Grosso and Susan L'Engle of Rio de Janeiro write to point out that the use of tracing gelatin, as recommended by Elmer Schooley in TTP 6, page 79, is also discussed by Grant Arnold in *Creative Lithography: How to Do It*, New York, Dover, 1941, page 24.

ferred to as *coté colle*. This mistake arises from the words stamped in the corner of the sheet. They are placed there to assist quick identification of the "coated side" (*coté colle*). A second common mistake is in use of the term, *a report*, as if it were the name of a specific Charbonnel paper. *Papier a report* simply means "transfer paper," and thus refers to all papers, not to certain types.

Since Charbonnel does not assign a name to each of its papers, the list that follows makes use of the descriptive identifications as used at Tamarind:³

Charbonnel glossy paper

A writing transfer paper, warm white in color, heavy in weight, and opaque. A laid paper to which a rolled-on coating, heavy and highly glossy, has been applied. Sheet size, 60.6 by 80 cm (23 $\frac{3}{8}$ by 31 $\frac{1}{2}$ inches). Intended for use with crayon, autographic and zincographic inks, and solvent-tusche drawing, this paper has come to be the bane of all who have used it. Characteristically, in the transfer process, this paper glues itself to whatever element is used; instead of pulling off cleanly in a sheet, it layers away from the drawing until only a covering of coating and paper-fibers remains, so much so that it has come to be known among printers, not affectionately, as "stick-and-pick paper." What remains on the transferred drawing must be methodically picked off with a razor blade or fingernail, often with damage to parts of the drawing. During this picking process, the coating must remain wet, for once it dries, it is almost impossible to remove. As this paper was for a long time the only one available, constant failure was usually attributed to some faulty procedure used in making the transfer, this despite the fact that no matter how the procedure might be varied, the results were consistently poor. Theories that can be advanced to explain the problem include the formulation of the coating and the age of the paper.

Charbonnel matte transfer paper

A writing transfer paper, cool white in color, medium in weight, and opaque. A laid paper to which a rolled-on coating has been applied. The matte surface characteristically has a subdued gloss. Sheet size, 60.6 by 80 cm (23 $\frac{3}{8}$ by 31 $\frac{1}{2}$ inches). It is possible to transfer crayon, autographic and zincographic inks, heavy tusches and solvent materials using this paper. Results are excellent. The paper releases rapidly and pulls off the element in a complete sheet. Procedures for its use will be discussed below.

Charbonnel transparent transfer paper

The base used for the coating is a glassine paper, thin, with a brittle quality. It carries the familiar oval Charbonnel stamp on its coated side. Sheet size, 64.1 by 98.4 cm (25 $\frac{1}{4}$ by 38 $\frac{3}{4}$ inches). Although the coating is very smooth and slick, the paper is slightly crinkled. A touch of water causes it to pucker and wrinkle. Normal transfer methods cause immediate wrinkling of the paper and stretching under pressure. Tight registration is difficult if not impossible when using this paper, and the combined effects of puckering, wrinkling and stretching are often seen in the transferred image. The coating releases rapidly and well.

Charbonnel jeune (yellow) transfer paper

A writing transfer paper, yellow in color, with a coating applied by brush to a lightweight laid paper. The coating appears streaked, but this has no effect on the drawing or transfer. Sheet size, 50.2 by 66 cm (19 $\frac{3}{4}$ by 26 inches); available only in this small size. Designed for crayon, inks and solvent tusches, the paper transfers well and quickly using normal procedures. Once this paper has been rolled it does not easily flatten out, and is best taped down when drawing.

Transfer papers other than Charbonnel include the following:

Rives lithographic transfer paper

A relatively new writing transfer paper manufactured by Rives in France.⁴ The paper is very similar to Charbonnel *matte* paper in appearance and performance. The coating is less white, tending toward a warmer tone, and there is a slight tooth. Sheet size, 58.4 by 78.7 cm. (23 by 31 inches); also made in rolls, 1.07 meters wide by approximately 45 meters in length. Although there was some concern that the paper might deteriorate with age, samples that have been on the shelf at Tamarind for a year and a half have performed well.

Yellow (bright) English heavy transfer paper

Originally from L. Cornellison, this paper carries a "Made in Great Britain" stamp on the uncoated side. The coating is liberally rolled on to the heavyweight, white, opaque, laid paper. Sheet size, 45.4 by 55.9 cm. (17 $\frac{3}{8}$ by 22 inches). When dry, a tension between the coating and the paper causes extreme curling. It takes crayon very well, also inks and solvent tusches. Water base materials may be used lightly and



Charbonnel glossy



Charbonnel matte



Charbonnel transparent



Charbonnel jeune

with care. It receives water into its structure very quickly and releases rapidly, without becoming transparent. Because of this quick release, a printer unfamiliar with its behavior may have problems caused by skidding, unless damping and pressure are well controlled.

"Prone" gummed label paper

Until May 1977 this paper was made by 3M, when the name and process were sold to Perfection Paper Manufacturing.⁵ Not designed as a transfer paper, it is made for use as a gummed label paper, and is described as having a "micro-particle" coating which "consists of millions of tiny glue islands that expand and contract independently."⁶ It is this toothy surface that makes "Prone" such an excellent paper for any kind of crayon work. It also receives inks and solvent materials satisfactorily. The highly absorbent character of the paper is a desirable quality for transfer, although it requires that a solvent tusche drawing be transferred as soon as possible after execution. Non-absorbent transfer papers (papers with completely hard surfaces) are perhaps better for use with tusche.

Sheet size, 50.8 by 63.5 cm (20 by 25 inches); available only in this small size. It is difficult to tell the coated from the uncoated side of the paper. The coated side is very slightly warmer in color. "Prone" transfers rapidly with light to medium pressure and medium damping. When the process is complete, the paper is sufficiently transparent so that one may see the image through it.

THE TRANSFER PROCEDURE is essentially the same for all of the papers that have been described. Variations occur in the amounts of pressure needed, the amount of water to be applied, and the number of courses needed through the press. The user must determine these differences through experience. Following are necessary steps in the wet transfer process:

1. *The press set-up.* Position the freshly grained stone or counteretched plate on the press. Select a flawless scraper of adequate length and position it in the press to cover the width of the paper. Lay a clean paper over the printing element, cover it with clean mylar, backing and tympan. Position the bed for the lowering of the scraper bar, and mark it. Set the pressure, usually quite firm for the first run through the press. Determine the end of the bed run, and mark it. Prepare two bowls of warm water; have clean sponges at hand.

2. *Transfers to stone.* Prior to making preparations for transfer, the stone should be placed in a warm room and allowed to come to

room temperature. When transferring drawings with minimal grease content it is often desirable to warm the stone beyond room temperature, as at higher temperatures stone receives grease more readily. In the nineteenth century stone-warming ovens were sometimes used for this purpose. The same result may be achieved by use of a torch to heat the stone.⁷

Damp the surface of the stone, then use a sponge to dry it down to a matte-damp appearance. When the surface is at minimal dampness, apply the transfer; cover it with mylar, backing and tympan; and run it quickly through the press. See paragraph 4 below for further procedures in making transfers to stone.

3. *Transfers to metal plates.* Unlike stone, plates should not be dampened prior to transfer. Plates are at their optimum capacity for reception of grease when freshly counteretched. Water trapped beneath drawing materials induces formation of oxides and results either in a spotty roll up or in a complete failure. To ensure adherence of the transfer to the plate, any of three procedures may be used: (a) The transfer paper may be dampened by placing it between damp blotters for a period prior to transfer, allowing the surface to become slightly tacky to the touch. When using this method, care must be taken to protect water soluble drawing materials from any dampness from above, and the initial pressure setting must be carefully considered, as damp drawing materials "smash" more easily than do dry materials. (b) The transfer paper may be attached to the lead edge of the printing element using masking tape. The back is then quickly sponged and it is run through the press. Both methods (a) and (b) are dangerous when using transfer papers that tend to wrinkle in the presence of moisture. (c) A sheet of laid paper is evenly dampened with a sponge; this sheet of dampened paper is placed on top of the transfer, covered with all appropriate backing materials, and run through the press. After one press run the dampened laid paper is discarded.

4. *Continuation of the transfer procedure.* After the first run through the press, similar procedures are followed either with stone or plate, and dampen the transfer paper lightly with water. Tapping the sponge on the back of the paper will drive water into it, although the pressure and quantity of water should not be so great as to force water through the drawing material on to the stone or plate. When properly done there should be only sufficient water to dissolve the coating and release the image.

Wipe the paper down, matte-damp, moving the sponge from the center toward the edges. Leave no excess water at the lead edge,



Rives lithographic



Yellow English



"Prone"

where it might squeeze under the transfer. Run the element through the press three times with all covers and backing material in place. Reduce the pressure, uncover the transfer, and check for transparency. If white flecks are visible in the paper, along with the image, the paper is not yet wet enough for complete release. Additional damping with the sponge may complete the process. Some papers will require additional cycles in the press—one, two or more—with damping between them.

5. *Processing.* Dry the plate or stone, apply rosin and talc to the image. If aluminum has been used, a straight gum etch will usually be sufficient, although if solvent tusche or other very greasy drawing materials were employed, an etch of two parts gum and one part plate etch may be required, with possible spot etching of very greasy deposits. If stone has been used, the image is relatively secure and will require an appropriate etch as determined by the quality of the stone, the drawing materials transferred, and the quality of the transferred image.

Stone-to-stone transfers

GERMAN EVERDAMP PAPER has for many years been considered the standard and reliable paper for use in making stone-to-stone transfers. Unless kept in an airtight container to retain its everdamp characteristics, the coating would dry, sometimes within minutes, becoming brittle and useless. If improperly stored by a supplier, it could often be received in such a condition. For better or for worse, these problems appear to be over, as we are told that German everdamp paper is no longer available.

The necessity for a dependable stone-to-stone paper is ever present in the workshop. Such a necessity has forced us to develop at Tamarind a paper that can be made quickly from easily obtained materials. Following is a formula for the coating (a modified version of the everdamp formula given in TBL, page 232):

Water	1.0 liter
Agar-agar (laboratory grade)	2.5 cc
Glycerine	0.2 liter
Glucose (white corn syrup)	31.0 ml
Gelatine (high grade, pure, 100 bloom)	2.0 cc

(In U.S. measures, an approximately equivalent formula is water, 1 quart; agar-agar, 4 level teaspoons; glycerine, $\frac{3}{4}$ cup; glucose, 1 liquid ounce; and gelatine, 1 level tablespoon.)

Bring the water to a boil, add agar-agar, and dissolve. Lower heat to a simmer, add remaining ingredients while stirring (a wire whisk is best) and strain through double

cheesecloth into a glass jar. Cover and refrigerate in a glass jar, or, if intended for immediate use, place in a double boiler over simmering water.

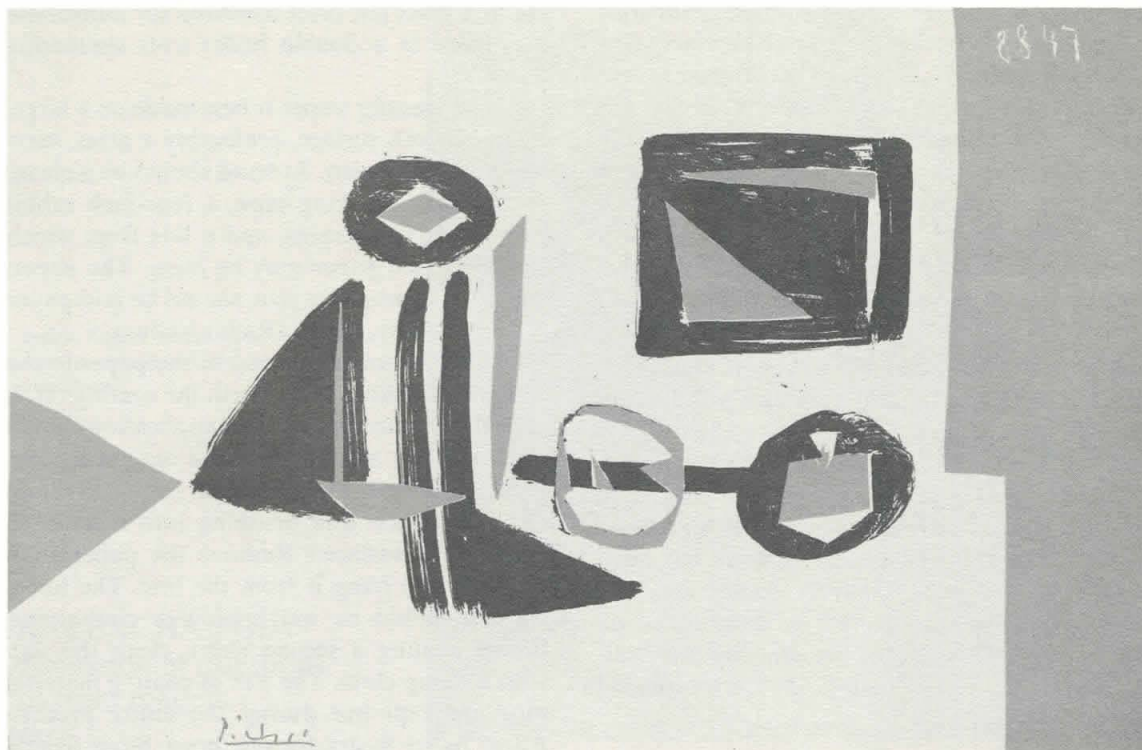
The transfer paper is best made on a large, clean, smooth surface, preferably a glass, marble or Formica slab. At hand should be a clean, damp cloth, masking tape, a four-inch rabbit hair brush, clothespins, and a line from which freshly coated paper may be hung. The paper, cut to an appropriate size, should be laid paper of good quality, such as Radar Vellum.

After securing one end of the paper to the slab with masking tape, brush the coating on. It should be steaming hot. The application should be broad and must be brushed out evenly and quickly, as the coating material begins to set up almost at once, and brushing into it tends to scumble its surface.⁸ Remove the paper from the slab and hang it from the line. The lower corners should be weighted with clothespins. Before coating a second sheet, clean the slab with a damp cloth. The pan of coating material must be kept hot during the entire process. Allow paper to dry for one hour. Store freshly made paper between clean sheets of Mylar in an airtight container or wrap in heavy plastic. No weight should be allowed to rest on the package. Paper can be stored for three to four weeks if the package is airtight. Fresh paper can be made within two hours of its intended use.⁹

THE TRANSFER PROCEDURE from stone-to-stone differs from the procedure used in transfer of drawings in that wet stone surfaces and damping procedures are not used. The image pulled on everdamp transfer paper should be slightly lighter in inking than would be an impression on fine rag paper. If a crisper transfer is desired, a little magnesium carbonate may be added to the ink; if a greasier transfer is desired, a little number three varnish may be added. The transfer should be completed immediately after the impression is pulled, using firm to heavy pressure. Progress of the transfer may be checked by carefully lifting the paper edge for examination. If the transfer paper is fresh and thus has some tack against the stone, it may safely be run repeatedly through the press.

The formulas given in TBL, pages 230 and 231, paragraphs 2 and 3, for stone-to-stone transfer paper and grained transfer paper have also been prepared and tested in the workshop. Results were excellent in both cases. Although designed for stone-to-stone transfers, the toothy surface of stone-to-stone paper also makes it

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PABLO PICASSO. *Composition*, 8 Aout 1947. Private collection, Albuquerque. Another impression of this lithograph was included in the first Cincinnati biennial (1950) under the title, *The Glass*. The handsome catalogs of the biennial exhibitions, in which all illustrations appeared in color, were designed by Noel Martin.

COLOR LITHOGRAPHY IN THE 1950s

The Cincinnati Biennials

a conversation with Gustave von Groschwitz
by Clinton Adams

Between 1950 and 1958, while curator of prints at the Cincinnati Art Museum, Gustave von Groschwitz organized an historic series of five international biennial exhibitions of color lithography. Coming at a time when lithography was at low ebb in the United States, these exhibitions, each of which was accompanied by a handsome catalog, provided an important stimulus to the medium. In March of this year, Mr. von Groschwitz and I discussed these exhibitions and his long association with American lithography. I began our talk with a question.

Von, let me start by asking how that first biennial came into being. Why did you suddenly get interested in doing a show of color lithographs in 1950? it wasn't a popular medium then.

I went to Cincinnati in 1947. And in 1948 I put on a show of 150 years of lithography, to celebrate the invention of the process.¹ And then through my personal contacts, visits to exhibitions, and articles in magazines and catalogs, I suddenly became aware that a lot of

color lithographs were being made in the United States. How about Europe, I wondered. So I explored that. Braque and Chagall and Picasso were going strong in the late forties, after the war, and the English were also very active. So I proposed to Philip Adams [then director of the Cincinnati Art Museum] that we organize a first biennial exhibition of color lithography. It had never been done before. I went to the New York dealers and wrote to people, including different sources abroad—they are listed in that first catalog. I got together a relatively small show of 235 lithographs. I remember the opening. It was a cold night, there weren't many people. But we got it off the ground.

Aided by our publicity, we started work on the 1952 biennial. I proposed that I ought to pick prints in Europe. It is the only way to make a successful show, I believe—and I have good arguments to support that belief. It is not just to get a free trip to Europe. The only way to do it is to pick things yourself, you can't depend on having them sent to you. That's how it happened . . . something clicked.

So the 150th anniversary show led to the biennials. But how did you happen to do the anniversary show?

That goes back further. Albert Heckman was one of the Woodstock group who also taught at Teachers College in New York. He was older than I, he was a teacher while I was a student at Columbia. I bought my first lithograph from him. At the same time I was taking an art history course, and the lecturer talked about Rembrandt's etchings. . . . Those were my first exposures to prints. Then, years later, I became particularly aware of color lithography while working with the Federal Art Project. In 1938 I got a job as curator of prints at Wesleyan University in Connecticut. When I had a chance to take off for a couple of years, I returned to New York and in 1947 completed a master's degree in art history at the Institute of Fine Arts [New York University].² I wrote my thesis on nineteenth century color lithography. Europe, America, all over—wherever I could find it. That clinched my interest and involvement with the medium.

You spoke of your work with the Federal Art Project. Would you expand on that.

I was supervisor of the graphic arts division of the Federal Art Project in New York. Russ Limbach, Guss Peck and others—including Bernarda Bryson, who later became Ben Shahn's wife—were interested in starting a lithograph shop. So we got one going, and there were exhibitions—there was a project gallery. We got good publicity in the *New York Times*, and I saw to it that we got into the magazines. Even though I'm not an artist, I learned something about the technique of lithography. The shop was run by Limbach and Peck. They and certain artists were eager to work in color lithography. It became a miniature revival.³ As supervisor I was in and out, and I learned how a lithograph is made. That enhanced my enjoyment of lithographs because I learned to see things, the fine things, the things that an artist is involved with—to me they are very beautiful—and I just got hooked on it.

Was there a master printer at the shop, Von, or did the artists print for themselves?

We had Ted Wahl, who had been teaching at the Art Students League and who was our master printer. There was also an old-time German printer, who used to print cigar-band labels, and then, of course, there were assistants to grain stones.

Where was the shop located?

It was on 39th Street, a little east of Fifth Avenue, in an office building, upstairs. We had three lithograph presses. There were also two etching presses and a Washington hand press.



Above left: Mr. and Mrs. Gustave von Groschwitz (left) talk with June Wayne at the opening of an exhibition at the American Embassy in Paris, June 1957. Above right: Examining a print while selecting an exhibition at the Cincinnati Art Museum, 1960(?). Below: von Groschwitz at the Federal Art Project workshop in New York, c. 1936-37.

And the artists came there to work?

To print lithographs, yes. And they came in for assignments. They had to check in at least every four weeks with sketches for approval. There was a separation between artists who qualified for relief and well-established artists like Stuart Davis and Kuniyoshi. They didn't have to qualify on a need basis, but they were helped by the project. That didn't last very long.

I remember that when I went to the University of Kentucky in 1954 one of the things I found was a fairly large collection of WPA lithographs, including a Stuart Davis.

Yes, prints from the project were often given to schools.

Project lithographs tended to be small and usually in black and white. This was also true of Miller's work and the prints that Kistler made. The color lithograph that I showed in your first Cincinnati biennial was only a little more than 9 x 11 inches. As I remember it, most of the American lithographs in the earlier biennials were smaller and perhaps less spectacular than the ones from Europe. I am sure this was related to the circumstances in which the artists had to work at that time. By and large, there were only small presses and small stones available.



REGINALD H. NEAL. Triptych. Included in the fourth Cincinnati biennial.

True. The convention of the time was the small etching, the small woodcut, and the small lithograph, meaning "portfolio size." But with increasing knowledge of lithography, the possibilities of the medium were further developed. And as American paintings got bigger, the prints got bigger too—until before long it got to be a problem in installation. But it was all to the good.

Aside from a change in size, what other changes did you see in the American prints between the time of the first biennial in 1950 and, say, ten years later?

Of course that was a period following social realism, in which many of the artists had dealt with social issues. Abstract expressionism was just beginning to take hold, so that the representational print was something you were quite aware of.

Although abstract expressionism had really taken hold in painting, it hadn't among print-makers to such an extent.

It hadn't filtered through at the time. As the Cincinnati shows went on, particularly in the

French prints, the abstract prints grew stronger, but the realistic phase held on. Perhaps print-making is somehow more conservative than painting. But even during the period of abstract expressionism, there were galleries that were showing realist painting. It wasn't dead, just submerged.

As I look at the names of the artists in the fifth biennial [1958], most of whom I recognize, I see that a very high percentage among the Americans must have printed their own work. Certainly this would be true of Garo Antreasian, Eleanor Coen, Max Kahn, Jerome Kaplan, Reginald Neal, Arnold Singer, Benton Spruance, and others. Whereas many of the European artists undoubtedly worked with master-printers.

Yes. I remember meeting June Wayne in Paris in 1957 when I was travelling in Europe to organize the 1958 exhibition. Already she was concerned that lithography was dying out in America for lack of printers. Tatyana Grosman also came out to Cincinnati and I met her for the first time. But yes . . . most of the artists printed for themselves. Where else could they have gone at that time?

Some that I recognize from my experience are artists who worked with Lynton Kisler, as I did. Of course Barrett and Miller were printing in the fifties, but much of their work was in black and white. Bob Blackburn, who often printed for other artists, exhibited two color lithographs in the 1950 exhibition.

The 1958 exhibition was the last of the five biennials. What brought the series to a close?

Well, people would ask why we didn't show all kinds of color prints. I remember replying, jokingly, that they must be trying to kill me! It was a tremendous undertaking for a small institution to put on so big a show. The exhibition had become very large [the 1958 biennial included 450 lithographs]. Organization of such a show involves a lot of work. Travel, staff time, and months away from the museum. But I had become aware of the fine work that was being done in other media—in taglio, woodcut, and then Picasso's wonderful linocuts of the bullfight [1959]. There had been an international exhibition of the woodcut at the Victoria and Albert in London. So why not include fine prints in other media?⁴

Was the Cincinnati Museum able to make purchases from the biennials?

Yes, a large number. Anyone who wanted to study the lithographs of the fifties would have to go to Cincinnati. It would all be there in that collection. I don't think its equivalent could be found elsewhere. Other museums didn't do such specialized buying in the field. And be-

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BIBLIOGRAPHY

Selected Recent Books on Lithography and Lithographers Compiled by Clinton Adams

The following entries supplement the bibliography included in *The Tamarind Book of Lithography: Art and Techniques* (New York, Abrams, 1971), pages 449-53. These entries are limited to books and museum catalogs published since 1969; works listed in TBL are not repeated here. Monographs are included only if lithographs comprise a substantial part of an artist's work. Articles in periodicals are omitted.

I. Technical Works

- 1969 Kruiningen, H. van. *The Techniques of Graphic Art*. New York, Praeger Pub.
A short, superficial survey of print processes. Translated from Dutch edition (1966).
- 1971 Loche, Renée. *La lithographie*. Geneva, Éditions de Bonvent.
An attractive but brief account of the process. Also English version by Julian Snelling and Claude Namy.
- 1972 Heller, Jules. *Printmaking Today*. New York, Holt, Rinehart & Winston.
The best of the general surveys of printmaking processes, a much revised and improved version of the author's original text (1958). Well-illustrated, some in color.
- Ross, John, and Romano, Clare. *The Complete Printmaker*. New York, Free Press.
Another general survey of printmaking techniques. The chapter on lithography included in the 1972 edition is brief and inadequate; this chapter is omitted in the paperback edition (1974).
- 1973 Faux, Ian. *Modern Lithography*. London, MacDonald & Sons.
A survey of offset lithography. Chapters on the chemistry of lithography and photo-lithographic platemaking are of interest to the artist-lithographer.
- Stellman, Jeanne M., and Daum, Susan M. *Work Is Dangerous to Your Health*. New York, Vintage Books.
"A handbook of health hazards in the workplace and what you can do about them." Includes discussion of solvents, lacquers and other materials commonly used in lithography. Every lithographer should be aware of the dangers that are present.



- 1977 Knigen, Michael, and Zimiles, Murray. *The Technique of Fine Art Lithography*. New York, Van Nostrand Reinhold.
Revised edition (see TBL entry 1970). Brief but well-organized manual designed for student use in the workshop.
- Maxwell, William C. *Printmaking: a Beginning Handbook*. Englewood Cliffs, N.J., Prentice-Hall.
An introductory text with separate chapters on stone, metal plate and transfer lithography.
- Senefelder, Alois. *A Complete Course of Lithography*. New York, Da Capo Press.
Paperback edition (see TBL entry 1818).

II. History of Lithography

- 1969 *American Printmaking: the First 100 Years*. New York, The Museum of Graphic Art.
Text by Wendy J. Shadwell. Includes only two lithographs.
- The Lithographs of Thomas Hart Benton*. Austin and London, The University of Texas Press.
A catalog raisonné, compiled and edited by Creekmore Fath.
- Print Collecting Today: a Symposium*. Boston Public Library.
Statements by Arthur Vershbow, Sinclair Hitchings and R. E. Lewis.
- Timm, Werner. *The Graphic Art of Edvard Munch*. Greenwich, Ct., New York Graphic Society.
Substantial text, bibliography. Well-illustrated, some in color.
- 1970 *American Prints in the Library of Congress: a Catalog of the Collection*. Baltimore and London, Johns Hopkins Press.
A basic reference work, extensively illustrated, with bibliographies and index. Compiled by Karen F. Beall.
- Field, Richard S. *Jasper Johns: Prints 1960-70*.

- New York, Praeger Pub., in association with the Philadelphia Museum of Art.
- An excellent text and catalog marred by poorly printed illustrations.
- Man, Felix H. *Artists' Lithographs: a World History from Senefelder to the Present Day*. New York, G. P. Putnam's Sons.
- Despite its ambitious title, an inadequate and imbalanced expansion of the author's *150 Years of Artists' Lithographs* (1953). Well illustrated, some in color.
- 1971 Adhémar, Jean. *Twentieth Century Graphics*. New York, Praeger Pub.
- A disappointing, imbalanced, and occasionally inaccurate survey. Illustrated, some in color.
- Castleman, Riva. *Technics and Creativity: Gemini G.E.L.* New York, The Museum of Modern Art.
- Catalog of a comprehensive exhibition of Gemini lithographs, screenprints and multiples held at MOMA in 1971. Illustrated, some in color.
- Early Lithography, 1801-1835*. Middletown, Ct., Davison Art Center, Wesleyan University.
- An illustrated exhibition catalog.
- Made in California: an Exhibition of Five Workshops*. Los Angeles, Grunwald Graphic Arts Foundation, University of California.
- The five workshops are Tamarind, Gemini, Collector's Press, Cirrus and Tamstone.
- Man, Felix H. *Homage to Senefelder: Artists' Lithographs from the Felix H. Man Collection*. London, Victoria and Albert Museum.
- The Man collection gives emphasis to 19th century lithographs.
- Tamarind: a Renaissance of Lithography*. Baltimore, Garamond/Pridemark Press.
- Catalog of an exhibition organized by the International Exhibitions Foundation. Introduction by E. Maurice Bloch.
- 1972 Will Barnet: *Etchings, Lithographs, Woodcuts, Serigraphs, 1932-72: a Catalog Raisonné*. New York, Associated American Artists.
- Compiled and edited by Sylvan Cole, Jr. Foreword by Robert Doty.
- Salamon, Ferdinand. *The History of Prints and Printmaking, from Dürer to Picasso*. New York, American Heritage Press.
- A general work which gives minor emphasis to lithography but which contains much information useful to the printmaker and student. Translation from the Italian, *La Collezione di Stampi* (1971).
- Selected Acquisitions, 1955-1972*. Middletown, Ct., Davison Art Center, Wesleyan University.
- Illustrated are notable prints, including many lithographs, acquired during the directorship of Heinrich Schwartz at the Davison Art Center.
- Aloys Senefelder, 1771-1834*. Philadelphia, Temple University.
- An excellent, annotated exhibition catalog with a brief but informative text by Victor Strauss.
- 1973 Castleman, Riva. *Contemporary Prints*. New York, Viking Press.
- Critical comments on seventy prints. A highly personal selection. Handsomely produced and illustrated, most in color. Also published in England under the title, *Modern Prints since 1942*. London, Barrie & Jenkins.
- Coke, Van Deren. *Clinton Adams*. Albuquerque, University of New Mexico Art Museum.
- Catalog of a retrospective exhibition of lithographs, 1948-72. Illustrated, some in color. Chronology and bibliography.
- Lewis, Louise M. *Garo Z. Antreasian*. Albuquerque, University of New Mexico Art Museum.
- Catalog of a retrospective exhibition of lithographs, 1951-72. Illustrated, some in color. Chronology.
- McClinton, Katharine M. *The Chromolithographs of Louis Prang*. New York, C. N. Potter/Crown.
- Prang & Co., competitors of Currier & Ives, published large numbers of chromolithographs between 1860 and 1897. Some are original lithographs, including Civil War drawings by Winslow Homer; most are reproductions, posters, maps, etc.
- Weisberg, Gabriel P. *Social Concern and the Worker: French Prints from 1830-1910*. Salt Lake City, Utah Museum of Fine Arts.
- An illuminating catalog which discusses many notable lithographs in their social context.
- 1974 *The Grunwald Center for the Graphic Arts: Twenty Years of Acquisition*. Los Angeles, University of California.
- An account of the growth and holdings of one of America's foremost university print collections. Introduction by E. Maurice Bloch. Includes many 19th and 20th century lithographs.
- Knigin, Michael, and Zimiles, Murray. *The Contemporary Lithographic Workshop around the World*. New York, Van Nostrand Reinhold.
- A handsome, large volume with many illustrations in color. The text is superficial and sometimes inaccurate.
- Kornfeld, E. W., and Wick, P. A. *Catalogue raisonné de l'Oeuvre gravé et lithographié de Paul Signac*. Berne, Kornfeld et Klipstein.
- Fully illustrated, many in color.
- Zigrosser, Carl. *Prints and Their Creators: a World History*. New York, Crown Pub.
- Second, revised edition of Zigrosser's comprehensive survey, originally published in 1937.
- 1975 Adams, Clinton, *Fritz Scholder: Lithographs*. Boston, New York Graphic Society.
- A complete catalog of Scholder's lithographs

- through April 1975. All works illustrated, some in color. Chronology, bibliography.
- Homage à Tériade*. London, Diploma Galleries, Royal Academy of Art.
- Catalog of an exhibition of Tériade's livres d'artiste.
- Lithography I*. Albuquerque, University of New Mexico Art Museum.
- Catalog of the first in a series of biennial exhibitions of lithography. Introduction by Clinton Adams.
- Mason, Lauris. *Print Reference Sources*. Millwood, N.J., Kraus-Thomson Pub.
- A bibliography of reference sources on print-makers and prints in the 18th, 19th and 20th centuries.
- Whistler Lithographs*. London, Jupiter.
- An illustrated catalog raisonnée compiled and edited by Mervyn Levy. Supplements Way (1914) by listing lithographs later reprinted by Goulding.
- Winkler, R. Armin. *Die Frühzeit der deutschen Lithographie: Katalog der Bilddrucke von 1796-1821*. Munchen, Prestel-Verlag.
- Lists 952 artists who made lithographs in these early years. An indispensable reference for study of German lithography.
- 1976 Carey, John Thomas. *The American Lithograph from Its Inception to 1865*. Ann Arbor, University Microfilms.
- A readable and informative account of the development of lithography in the United States during the earlier 19th century. Biographies and bibliography. Publication of a Ph.D. dissertation, Ohio State University, 1954.
- Castelman, Riva. *Prints of the Twentieth Century*. New York, Museum of Modern Art. English edition: London, Thames & Hudson.
- A short history of the fine print in the 20th century. Illustrations selected entirely from the MOMA collection, with selective emphasis given to certain aspects of recent printmaking.
- Eichenberg, Fritz. *The Art of the Print: Masterpieces, History, Techniques*. New York, Abrams.
- A handsomely produced and comprehensive volume based, as the author states in his preface, "on one artist's personal views, experiences, preferences and antipathies." Well illustrated.
- Lynton R. Kistler. *Printer-Lithographer*. A description of books printed between 1927 and 1974. Northridge, Calif., California State University Libraries.
- Compiled by Norman Tanis, Dennis Bakewell and Don Read. Introduction by Jacob Zeitlin.
- Morse, Peter. *Jean Charlot's Prints: a Catalogue Raisonné*. Honolulu, University of Hawaii.
- Fully illustrated, some in color, with an introduction by the author and illuminating comments from the artist's journals.
- Reich, Sheldon. *Graphic Styles of the American Eight*. Salt Lake City, Utah Museum of Fine Arts.
- Illustrated, with chronology and bibliography.
- 1977 Johnson, Una. *Ambroise Vollard: Editeur*. New York, The Museum of Modern Art.
- Revised and expanded, both in text and entries, from the author's earlier version (1944). Illustrated.
- Tamarind: Suite Fifteen*. Albuquerque, Tamarind Institute, in association with the University of New Mexico Art Museum.
- Catalog of the second in a series of biennial exhibitions of lithography. Introduction by Gustave von Groschwitz. Illustrated, most in color. Biographies of the artists.

TRANSFER PAPERS *continued from page 85*

suitable for broad crayon drawings, as is grained transfer paper. Neither will transfer with pressure only, damp transfer methods are required.

1. Senefelder, Aloys. *A Complete Course of Lithography*. London, 1818, page 256.

2. In telephone conversations with Rembrandt Graphics and Graphic Chemical company we were told that German everdamp paper is no longer available.

3. Carbonnel transfer papers are available from M. Flax, 10853 Lindbrook Drive, Los Angeles, CA 90024, or from Sam Flax, 25 East 28th Street, New York, NY 10016.

4. Rives transfer paper is available from Andrews/Nelson/Whitehead, 3110 48th Avenue, Long Island City, NY 11101.

5. "Prone" gummed label paper is distributed nationally by Graham Paper Company.

6. Printer's Guide, 3M brand papers, Minnesota Mining and Manufacturing Company, St. Paul, MN, 1973, page 39.

7. See TTP, March 1974, page 2.

8. In TBL, page 232, a second coating is recommended. Recent experience indicates that the second coat is not needed on Radar Vellum. If a more absorbent paper were used, a second coat might be required. If so, it should be applied very rapidly, and only after the first coat had been allowed to dry for at least one hour.

9. Unused material may be refrigerated and reheated in a double boiler when needed. If stored for prolonged periods, addition of a preservative would be required.

Judith Nelson sprays Liquitex polymer medium through a screen on to an aluminum plate.



INFORMATION EXCHANGE
a column for discussion of questions
and suggestions from readers
by John Sommers

Airbrush Drawing in Lithography

TTP has received two questions from distant parts of the country, both about airbrush techniques in lithography. Donald Agnew, a student at Eastern Montana College in Billings asks about processing drawings made with airbrushed Korn's stick tusche. He describes several drawing and etch controls but explains that his drawings always fill in. Byron McKeeby, professor at the University of Tennessee, writes for a graduate student who is using polymer materials with airbrush, following Ben Adams' article, "Airbrush Drawings with Polymer Materials," TTP 3, January 1975.

Delicate tones are dropping out. They seem to be there but don't print . . . I have altered everything I know of. Does Tamarind have any more notes on this technique?

In Agnew's question the problem lies in the use of tusche rather than polymer to make the airbrush drawings. Some years ago, Tamarind thoroughly researched the use of tusche in airbrush techniques, and developed several processes. One included the preparation of a solvent-based material composed of triple ink, asphaltum, lithotine and oleic acid, diluted to a proper consistency with lacquer thinner; another used Korn's liquid tusche, diluted one-third with water. There were in each case extreme problems in processing, ranging from grease-concentration to etch-strength; these in

turn requiring extreme under-drawing, and a resultant fragility of the image, requiring highly skilled etching, washout and roll up. None of the tusche techniques we explored satisfactorily answered the needs of the artist. These techniques are apparently complicated in two ways: first, by the inherent irregularity and imbalance between grease and pigment in Korn's tusches (particularly true of Korn's stick tusche), and, second, by the fact that tusches, whether in water suspension or solvent solution, contain non-visible grease. Such grease, in greater or lesser proportion, rapidly adds to and fills in visible pigment gradations while the image is being drawn. By the time the value appears visibly correct to the artist's eye, it is already much overdrawn because of this non-visible grease.

These problems led to Tamarind's development of polymer drawing techniques, as described in Adams' article. The principle in polymer drawing is that of stop-out, eliminating the inherent difficulties caused by tusche. Using polymer, it is possible to airbrush accurate gradations of tone, provided that a few simple facts are kept in mind: (1) too great a dilution will weaken the bond between the polymer and the printing element; this, in turn, will weaken resistance to the etch and will cause the drawing to be too light; (2) too much spray will rapidly fill the grain, so that a black area will result far in advance of an apparently black tone; (3) too great a distance between the

airbrush and the printing element will allow the polymer to dry before it attaches to the grain of the plate or stone; and (4) too short a distance between the airbrush and the printing element will bring about a "clogged" appearance, and darks will mature too rapidly. It is also important that sufficient time be allowed for the polymer to cure properly. If the etch is applied immediately after the airbrush drawing is made, the polymer may still be soluble in water, and as gum etches are water based, parts of the drawing may dissolve.

McKeeby's statement that tones "seem to be there but don't print" suggests two different problems. Either there are delicate tones in the drawing that fail to roll up, or there are tones that roll up but fail to print. Both possibilities should be considered. If tones are not rolling up, several causes are possible, alone or in combination. Both the distance between the airbrush and the printing element and the size of the spray are important (as discussed in Adams' article). As the spray becomes finer, one must work closer to the plate, otherwise the spray will dry to some degree in transit, thus forming an insufficient mask to protect the tiny spots that it forms from the acid/gum reaction. If it dries completely before it hits the printing element, it may *appear* to be attached, but still come off when the plate is buffed or the etch is applied. Note also that only the *gloss* polymer medium should be used; the *matte* medium contains marble dust, which serves to weaken its attachment to the plate. All of Tamarind's work has been done using Liquitex, which gives consistently good results (we can say nothing about other brands). It may be desirable to adjust the proportion of the mixture, as suggested by Adams, from 1 part medium, 1 part pigment (Mars Black) and 1 part water, to 1½ parts medium, 1 part pigment, and 1 part distilled water.

The etch should also be checked, both in strength and procedure. Because the drawing is a stop out, there is no need to consider the etch strength in terms of grease reservoirs. The purpose of the etch is solely to create an adsorbed gum film around the dots of the airbrush drawing. Since gum adsorbs at its maximum capacity at a pH of 2.8, there is no reason to use an etch of lower pH on any printing element. Indeed, it is best to etch at a pH of 3.0 to 3.2 on stone or aluminum and at 3.8 to 4.0 on zinc.¹ Stronger drawings do not require stronger etches, as there is no grease reservoir: only a perfectly adsorbed gum film on the negative areas. Stronger etches might cause either of two problems: (1) small dots, which are proportionally thinner as they are smaller in circumference, might be burned out,

or (2) the adsorbed gum film might be weakened. Such a weak, adsorbed film might permit scumming during roll up, with a resultant enlargement of the smaller dots.

The etching process should not exceed three minutes. It is important to buff the element down with care; vigorous or heavy buffing may loosen thinner attachments, which because of their thinness have low tensile strength. Distilled water should always be used for washing out plates (and is often desirable on stone). Plates waterburn easily when there are chemicals (hardness) in the water; use of distilled water until after the second etch will avoid this hazard. This is particularly true of the lightest areas, where the lacquer or asphaltum is thinnest. Neither lacquer nor asphaltum, either separately or together, forms a film capable of providing safe protection against the waterburning of tiny dots which have not yet become grease reservoirs. If either on stone or aluminum they are waterburned at this stage, they will roll up weakly or not at all, depending upon the degree of burn. Although perhaps visible as ghosts, they will not print.

It is our preference to go directly from the polymer drawing material to lacquer (unless grease-based drawing materials and/or gum masks have also been used). In any event, the printing element should be regummed before wash out. When going directly into lacquer, three gum films are buffed onto the printing element; when going into grease (in the absence of grease-based drawing), the old etch is washed off with water, the element is fanned dry, and a fresh gum film is put down. Using these procedures, the lacquer will come off the negative areas easily and quickly at wash off prior to roll up. No acid will be left on the surface, where it might be reactivated by water precisely at the moment when the new image dots are at their most delicate.

If rolled up carefully, the image should be perfect. The ink used for the roll up should be neither too tacky nor too loose. If too tacky, the roll up will be slow, the dots will be grease-starved and unprotected; if too loose, the roll up will be so fast as to be uncontrolled, thus becoming overinked. Too dark a roll up may be

1. Using mixtures of gum arabic and plate etch (pH 2.3 to 2.5), the ideal mix for etching of polymer airbrush drawings on aluminum is about one-third each, gum arabic, plate etch and hydrogum. Without hydrogum, the mixture may be two-thirds gum arabic and one-third plate etch (which is weaker than the mixture containing hydrogum). For stone, a typical etch might use 3 drops of nitric acid to an ounce of gum arabic (pH 3.2 to 3.4). For zinc, the mixture may be two-thirds hydrogum and one-third cellulose.

caused either by too loose an ink or by poor roll up technique. Too light a roll up may be caused by too heavy bodied an ink, or by prior errors in wash off or drawing procedure, or faulty drawing materials.²

The second etch on a grease surface should be of medium strength: 3 to 7 drops on stone (pH 3.4 to 2.5), one-third to one-half plate etch on plates. On a lacquer surface it is safe to use 7 drops on stone, one-half plate etch on metal.

2. If losses are experienced on plates, counteretching procedures and materials should also be checked. Plates should always be counteretched immediately before drawing so as to remove oxides which are constantly forming on their surfaces. Oxides prevent drawing materials from gaining a good footing, a particular problem in the case of polymer airbrush drawings. Fine tones may be lost if, either because of improper counteretching or extended storage after counteretching, oxides have formed on the plate. Use of distilled rather than tap water in the polymer drawing material, as recommended in this article, should deter plate oxidation under the dots of spray. For a discussion of counteretching procedures on aluminum, see TTP 2, pages 15-16.

Plate Support Protection

A number of materials are now in use as supports for plates on the press. Whatever may be used—an aluminum block, Durel, Benelux, or an old stone—the support should be protected against various forms of wear inherent at the press. Aluminum, slate and stone will all react to water, gums, and acids, causing a slow dissolution of the material and creating a hollow in the center of the support. This leads in turn to uneven printing pressure and to a situation in which the support can be corrected only by regaining it to level. The fibrous materials, although dense, are nevertheless porous and over a period of time will absorb moisture, causing swelling and/or warping. These problems can be avoided if support blocks—whatever the material—are treated with epoxy prior to use. A clear epoxy and hardener are mixed together to about the consistency of honey. With rags, the epoxy is rubbed into all surfaces of the support, as one would apply wax. Hard, smooth buffing is necessary, so that no residual epoxy remains on the surface. There must be no unevenness, streaks or pools; these must be completely buffed away. The epoxy is allowed to cure overnight, after which a second coat is applied in the same manner as the first. This having been done, the pores of the support are permanently sealed and impervious to water, gum and acids. The coating of epoxy is insoluble in lacquer thinner and other powerful solvents.

Tamarind has recently experimented with water seal, a clear, colorless, watery sealant for brick and cement. Simply painted on slate or stone, it is absorbed, then sets up. After several coats of sealant, buffed in about two hours after application, the surface seems to be as impervious as after application of epoxy. We have not yet determined whether water seal will be slowly removed by powerful solvents. It is more easily applied than is epoxy, and applications may be renewed from time to time provided that the support is clean. Larger quantities of water seal are required, but its cost is low.

Reclaiming Carborundum, and Other Ways to Beat Inflation in the Workshop

Inflation makes it increasingly difficult to balance budgets in university workshops. With the cooperation of his students, Robert Gardner, Tamarind Master Printer and associate professor at Carnegie-Mellon University, has moved to reclaim expensive graining materials and to recycle equally expensive maple bars. He writes TTP as follows:

I doubt if there is anything profound or even new about my process for hand-straining carborundum, and it is certain that the procedure can be done by anyone, without special training! I simply use a sieve (brass, eight-inch, Burrell Corporation Catalog No. 75-900). I am sure that any company selling scientific equipment can provide many different kinds of sieves. I am using one of sixty mesh simply because I happened to have one in my storehouse of goodies, collected over the years. It works fine now. We collect all the used carborundum from the graining bins and spread it out on plastic sheets on the floor to dry. When dry, we put on dust masks and start straining! It takes several hours to strain about 100 pounds, and it is dusty because of the dry stone particles floating through the air.

The process is feasible in a classroom situation. It takes approximately three times as long to grind and grain a large stone with recycled grit as when pure number 100 grit is used for image removal. If the recycled grit is kept watery and dark grey in value, no scratches occur, and when the image has been removed, it is possible to go directly to the final graining grit—even to "F," if desired. The recycled grit forms a finer grain than 100, obviously, but it does save money.

At Carnegie-Mellon we still use maple for scraper bars, not yet being able to afford the plastic variety, and I am now recycling broken bars in order to save even more money. When

scraper bars collapse, as they do from time to time, I trim off the broken parts, cut the remaining pieces into 2¼ inch lengths on our table saw, then glue the pieces together. I then shape (taper) the fabricated pieces with the table saw and belt sander, making a new scraper bar with the grain of the wood running vertically instead of horizontally. With the grain running vertically there is less chance of collapse under pressure.

I can also mention that some of our students are using oil paints for lithographic printing—modifying the paints with litho varnish to achieve the tack necessary for printing. And it works!

A Quick Color Proof Registration Method for Drawing Color Separations

Charles Ringness, Tamarind Master Printer, was studio manager at Graphicstudio in Tampa, Florida, from 1970 until it closed in 1976. He is now teaching at the University of Saskatchewan. In a recent letter from Saskatoon he tells of a method for placing a key drawing on each printing element, in reference for accurate color registration.

While working at Philip Pearlstein's studio in New York, I encountered the problem of finding a method for an accurate, greaseless and visible tracing on the plates to be drawn. A new solution had to be found to replace the traditional method of tracing, including registration marks, from the first plate drawn, the re-tracing through a conte-coated sheet of newsprint on to the other plates. This traditional method was not accurate and did not record enough information to begin the drawing of the remaining plates. Since pulling a proof from the first plate would not work, several alternate methods were attempted. Time and materials were just sliding by. Nothing seemed to work. Oscar Bailey collaborated with me as a consultant, and within a matter of minutes we had given up on every solution we considered.

I suggested that we try Kwik-Proof Color Proofing solution. I had used it before and had found that it gave a greaseless, accurate and visible image when executed photographically. First the plate was sensitized with Kwik-Proof (red). The solution was applied with a sponge over the entire surface of the plate, rapidly wiped tight with cheesecloth, and left to dry. Moving rather quickly, the plate was placed in a vacuum frame. We placed a proof printed in black ink on Mylar (including registration

marks from the first plate) in contact with the sensitized plate and cut the registration marks. The Mylar impression was used as a negative; wherever light was allowed to pass through it, the color hardened on the plate. The sensitized plate was exposed to a 220 arc lamp for two minutes at a distance of 42 inches.

After the exposure, we carefully removed the Mylar negative and transferred the plate to a tank where it could be hosed down with water. After rinsing with cold water, we used a mixture of 1½ ounces of household ammonia (sudsy type) to one gallon of water, applying it over the entire surface with a sponge. This allows the ammonia solution to lift off the film that has not been exposed to light. The sensitized surface hardens and remains intact where light has penetrated the Mylar. The procedure was repeated on the third, fourth and fifth plate, thus giving the artist a new, accurate, greaseless and visible means of drawing the remaining plates for a multiple color edition. The visible red stain did not pick up any ink nor did it cause any scum during the running of the edition.

For best results, the ink surface of the Mylar should be carefully dusted with red iron oxide so as to make it more opaque before using it as a negative. Use only a small amount of oxide and wipe off the excess with a soft cloth.

Upon receipt of Ringness' letter we talked by telephone:

- J. S. Can the artist draw over the areas which have been developed in red with lithographic drawing materials—pencil and rubbing crayon, water and solvent tusches?
- C. R. Yes. The red image [Kwik-Proof Color Proofing solution] is not a resist, nor does it have greasy properties that would affect a drawing.
- J. S. Do drawings over the red coating process well?
- C. R. Very well. The etch does not even recognize that the Kwik-Proof product is on the plate.
- J. S. Is there a difference in the roll up between the red and non-red areas?
- C. R. No. There is no difference in the roll up. All parts of the drawing roll up exactly the same.
- J. S. Have you used Kwik-Proof on stone or zinc plates?
- C. R. No. The size and bulk of stone would make it impossible to put it into a vacuum frame.

In sunny climates stone could, of course, be taken outdoors for full sun exposure. Use of Kwik-

Proof on zinc has not been tested at Tamarind, but there is no reason to assume that results would not be good. Use of the pin registration method (see TTP 1, pages 8-11) would eliminate transferring T and bar marks to new plates and would simplify all drawings and printing procedures.

Direct Reproduction Corporation, makers of wipe on Kwik-Proof color proofing materials, recommends that a Stouffer continuous tone Sensitivity Guide (available at offset supply houses) be used in exposure. Best results are obtained at solid step four. Temperatures lower than 17° Celsius (72° Fahrenheit) and humidity below 45% will require increased exposure to obtain a solid step four. Kwik-Proof solutions are available from offset supply houses and also directly from Direct Reproduction Corporation, 835 Union Street, Brooklyn, NY 11215. Complete directions come with the product.

VON GROSCHWITZ

continued from page 88

yond the fifties Mary Baskett and Kristin Spangenberg, my successors as print curator, added important items too.

In the intervening years, the workshops that June Wayne and Tatyana Grosman envisioned in the fifties have actually come into being—not only Tamarind and ULAE, but Ken Tyler's and many others. As you look around at lithography today, what differences do you see?

I think the artist has become much more fully aware of the possibilities of lithography. There was a good bit of technical experimentation, even in the early days—scraping, applying gasoline, doing all kinds of new things—but the workshops have developed far beyond that point technically. And the workshops have brought in very fine printing, which is so important to the finished lithograph. I would say that the technique learned by the artists and the assistance given them by the printers are two very important developments.

It is interesting to imagine what would happen if in 1978 the Cincinnati Museum—or any other museum—were to try again to organize an international exhibition of color lithography. If you were to try to project such an exhibition in your mind's eye, do you think there would be a different relationship between the American and European lithographs? What would you expect to find?

Well, Picasso is gone . . . Miró and Chagall are still working, but they are old men. I am going to Europe this summer, so I will have an opportunity to see what is being done.

I guess what I'm getting at is that those shows of yours in the fifties reported on what was really a high moment in European lithography, while it wasn't at all a high moment in the United States. Artists were struggling under difficult circumstances, mostly by themselves, somewhat in isolation. Now, by contrast, the print media are much more visible, facilities are much finer, and the schools offer better instruction. Altogether, American lithography has moved a long way forward.

True, there have been remarkable changes. But I am looking forward to seeing what is happening in Europe, too. There were lithographs in the international print exhibition at Bradford, England, in 1974, but there were also many screenprints. I think this invidious technique may cause a great deal of damage to the collecting of prints of quality. So often they are reproductive in character, executed by craftsmen. They lack the quality, the spirit, of the handmade print. Françoise Gilot was saying to me just yesterday, here at Tamarind, how great a difference there is when the artist does a drawing, rather than turning it over to a craftsman.

You would really have to be an investigative reporter to answer a question about the state of prints today, but I am afraid color lithography doesn't hold the same position in Europe that it did twenty years ago. I will be visiting eastern Europe as well as Paris and London. This summer I am going to Vienna, to Ljubljana to see their print international, then to Moscow, Leningrad, Helsinki and Amsterdam, so I will be better able to say what is going on there when I return.

I know that an impressive number of superb color lithographs have recently been made in this country. I am convinced that we should again focus attention on contemporary color lithography in the form of a biennial or triennial exhibition—first American, then international—and I am already working on definitive plans.

1. Cincinnati Art Museum. *One Hundred and Fifty Years of Lithography*. 1948. An Exhibition of 187 lithographs. Foreword by Gustave von Groschwitz.

2. Mr. von Groschwitz was with the Federal Art Project from 1935 to 1938, at Wesleyan University from 1938 to 1945, and at the Institute of Fine Arts from 1945 to 1947.

3. A 1938 exhibition, "Printmaking: a New Tradition," included a special section of twenty-three color lithographs.

4. Beginning in 1960, the biennial series was broadened to include prints in media other than lithography. It came to an end when in 1962 Mr. von Groschwitz left Cincinnati to become director of the Carnegie Institute Museum of Art in Pittsburgh.