

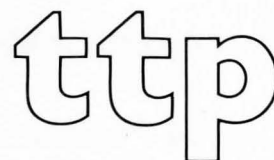
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THE TAMARIND PAPERS

Technical, Critical and Historical Studies on the Art of the Lithograph



Volume II, Number 2
Spring 1979



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Technical, Critical and Historical Studies on the Art of the Lithograph

Editor: *Clinton Adams*

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The **Tamarind Papers** are published twice each year by Tamarind Institute, 108 Cornell Avenue, SE, Albuquerque, NM 87131. Telephone 505: 277-3901. No part of this publication may be reprinted without permission. Tamarind Institute, a division of the University of New Mexico, is successor to Tamarind Lithography Workshop, Los Angeles.

SINGLE COPY PRICE: \$3.00. SUBSCRIPTIONS: one-year, \$6.00; two-years, \$10.00; three-years, \$13.00.

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).

COVER



Earl Stroh. *Taos Makimono Suite Part II*, 1975.
404 × 629 mm. [T75-661]

The four lithographs comprising *Taos Makimono Suite* were printed at Tamarind Institute by Lynn Baker, Glenn Brill and Richard Shore. Parts I, III and IV were printed in five colors, entirely from stone; Part II was printed in six colors, from four stones and two aluminum plates.

AT A TIME when many strive for originality, and only succeed in making a caricature of their subject, it is a pleasure for me to see the true originality of the work of Earl Stroh.

For me, his pictures are essentially spatial, not as an illusion of depth arrived at by means of traditional perspective but by the total divisions of the surface of his pictures according to the imagery he has in mind. There is no vanishing point, only a horizontal and diagonal interplay of tones.

The beauty of Stroh's work is largely in its technical execution, whether in oil, silverpoint or pastel. No matter what the medium, the result is a unity unique in its simplicity.

Andrew Dasburg, 1973

Earl Stroh, who has lived and worked in Taos since 1947, was born in Buffalo in 1924. He studied in Buffalo, at the Art Students League in New York, the Atelier Friedlander in Paris, and with Andrew Dasburg and Tom Benrimo. He has exhibited frequently throughout the United States and in Europe, and his work is in many public collections, including the Art Institute of Chicago, the Cincinnati Art Museum, the Dallas Museum of Fine Arts, the Denver Art Museum, the Fort Worth Art Center and the University of New Mexico Art Museum.

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EDITORIAL

On Art and Process

METAPHORS COME TO MIND: Frankenstein's monster or, at the least, the Sorcerer's apprentice. Every technological advance in the art of the lithograph carries with it dangers of aesthetic and ethical disaster.

Readers of TTP know by now that we hold a conservative view of lithography. For thirty years we have pursued a love affair with stone. Despite Tamarind's commitment to discovery and publication of information about all of the medium's seemingly endless possibilities, we not too secretly hold that most of the very great lithographs have been simple black and white images drawn on stone by masters. Metal plates we acknowledge as having their place, as does transfer paper, although we dissent from Senefelder's view that it might be "the principal and most important part" of his discovery.

The range and possibilities of lithography have been greatly extended since Tamarind began in 1960. The fine, crayon-stone lithograph, built up slowly in the classical manner, has become a rarity. New methods and materials have been introduced, permitting evolution of color lithographs of a richness and complexity not earlier dreamed of. A generation of remarkably skilled master-printers has been created, and through their collaboration with the leading artists of our day the once declining art of lithography has been not only revived but thrust onto center stage.

There is danger in the limelight. Along with the changes in lithography has come a change in its clientele. A small number of knowledgeable collectors and aficionados has been replaced by a large, enthusiastic but uninformed audience. Prints no longer reside in Solander boxes, they hang vividly on walls, too often not as things in themselves but as surrogates for the paintings that cannot be afforded. This change in audience, together with the simultaneous introduction of such technological "advances" as the Mylar drawing method and photo-sensitized plates, and the perception of art as Big Business, has led lithography into difficult ground. In his article, "The Corruption of Norman Rockwell" (page 42), Joshua Kind describes the perils to the concept of the original print which lie in the confusion created by those who deliberately misuse the technology now available. We fully agree with Kind in his condemnation of the Rockwell "lithographs" and the inanities of Mel Hunter, and we are grateful to him and to the Editors of *The New Art Examiner* for permission to reprint his article.

Simultaneously, if paradoxically, we find ourselves presenting a report on the use of xerographic process in lithography and, in John Sommers' "Information Exchange," notes upon both negative and positive-working photo-sensitized plates. While reflecting upon this seemingly schizophrenic editorial behavior, we become aware as never before of the apparent conflict in attitude which permits us to publish, as example, a description of the way in which tusche

may be caused to crystallize, creating abstract patterns, side by side with a declaration—not only on this page but on the cover as well—of our eternal love of crayonstone.

It may well be that there is no paradox at all, no inconsistency in these actions. There is neither virtue nor fault in process. Complex technical processes possess in themselves neither ethical good nor aesthetic quality. The touch of a crayon held in a human hand, directly applied to stone, provides no assurance of value: witness the many hand drawn but far from “original” lithographs that have come down to us from lithography’s first golden age. Art educationist dogma (“process, not product, is the all important thing”) and the legacy of abstract-expressionist criticism (“the painting is an arena in which to act”) have combined to condition our thinking.

We need to take this all apart and put it together again. The medium is not the message. Any technical process can be used to make great art, or misused to make fraudulent trash. Ultimately, the former will succeed and the latter fail only when their audience knows the difference.

Clinton Adams

ITEMS FOR A HISTORY

AS PETER WALCH notes in his review of *French Lithography* (page 35), information about the great nineteenth century master-printers has historically been “lamentably under-published and under-appreciated.” Although their names may be familiar to contemporary students of the art, facts about their accomplishments are very hard to find. The more recent past is similarly obscure. A general history of the development of American lithography in the twentieth century has yet to be written. The principal printers of the first half of the century—George W. Miller, Bolton Brown, Lynton R. Kistler, Lawrence Barrett, and others—kept regrettably meagre records. With few exceptions the critics and historians who wrote about the artists of this period said nothing about the printers with whom they collaborated in the making of their lithographs. Only in the years since 1960, with the advent of the documentation procedures pioneered by Tamarind and adopted by ULAE, Gemini and other studios, have the data been preserved which might someday permit the writing of a comprehensive history.

In an endeavor to fill in at least a few of the gaps in our knowledge of the recent past, we have begun during the last several years to interview some of those who have personal memory of American lithography between 1918 and 1960, and to seek out facts and anecdotes about the events of that period. We have expanded THE TAMARIND PAPERS to include critical and historical studies as well as the technical articles which were its original purpose. In this issue we initiate a new feature, VIGNETTE, which will comprise short notes and reminiscences by or about the men and women who were directly involved in American lithography before 1960. We welcome submission of items which might be published in this series or which might appropriately be included in the Tamarind Archives of Lithography.

Vignette:

BOLTON BROWN: A Reminiscence

by S. Dale Phillips

Bolton Coit Brown
(1865-1936), c. 1932.



S. Dale Phillips, for many years a lithographer and teacher of lithography at Iowa State University in Ames, studied with Bolton Brown in the summer of 1932. Phillips later printed for many artists in Iowa. "I had not planned to print for other artists," he recalls, but ". . . when I got underway artists began coming and it soon developed with teaching and my own printing together, I had little time for my own work." In 1943, Phillips relinquished his professorship in art for a second career in engineering. He is now retired, living in Red Bluff, California.

I FIRST BECAME INTERESTED IN lithography in my early years in Iowa. I worked alone with minor success, but soon realized that it would take a long time to dig out all I needed to know and become proficient. Bolton Brown's book, *Lithography for Artists*, which I read soon after its publication, suggested another possibility.

I wrote to Brown asking if he could teach me. He answered saying if I could get two other students he would teach us for \$100 each. It turned out that I couldn't find two others, so I appeared at his door one day in 1932 and he took me as his only student. Brown's studio shop was out in the country near Woodstock, New York, where he had good printing equipment and some ceramic kilns. He worked alone.

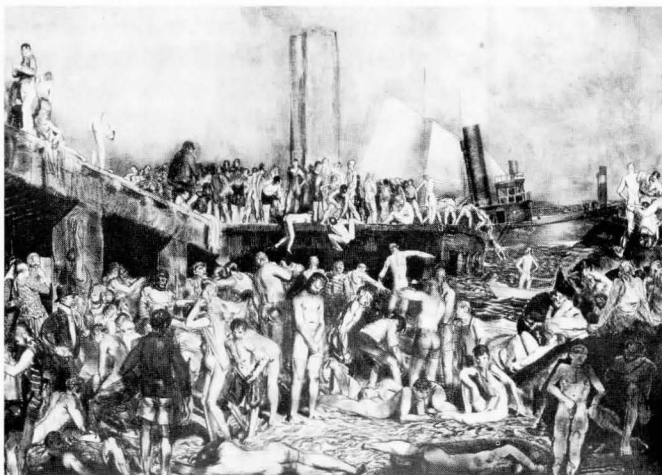
My impressions of Bolton Brown were not the same after working directly with him as they had been after merely reading his book. I had expected an egotistical, temperamental man whose self-esteem might shorten my stay. Just the opposite was true. During our collaboration he claimed that he had learned as much from his students as his students had learned from him. I would have enjoyed a much longer stay.

Brown was a supreme craftsman. Anything he decided to do was done to the fullest. He was a friendly, creative person pursuing constantly the inventive side of his activities. While in his book he clearly points out his achievements, I found, first hand, that he was not boastful in person. He had a marvelous understanding of the process, and as I carried through on printing problems with him I came to realize that he was truly the master of lithography for artists of that time. He did many things that had not before been done.

George Bellows preceded me as a student as



Bolton Brown. *Lime Burning*, n.d. 230 × 355 mm. Collection University of New Mexico Art Museum.



George Bellows. *Riverfront*, 1924. 375 × 527. Printed by Bolton Brown. Collection University of New Mexico Art Museum.

well as a client. Brown not only printed many of Bellows' works but also taught him to print his own. Bellows, however, was a believer in Brown's printing—and most of the prints that came out of Brown's shop were printed by Brown on stones grained by Brown, drawn with Brown's crayons and Brown's tusche.

He was a very frank man, treating famous people and non-professionals alike. I knew, of course, of his high regard for Bellows' work. One day while I was there he decided to clean up his shop and asked me to help. This had not been done since Bellows' stay in Woodstock. During the course of cleaning up debris, Brown stumbled on to a large ceramic plate the Bellows had made. Evidently they had collaborated on this piece, and it had gone sour. Brown apparently considered it to be one of Bellows' failures. He walked to the open door, grasped it by the edge, and sailed it like a frisbee some one hundred-fifty feet into the meadow at the side of his shop. It crashed and shattered into many parts. I then cleaned up the meadow, too, hauling the debris away in my car. Later, I spent many hours gluing this jigsaw puzzle together, but there were so many missing parts that I couldn't manage it. The absent pieces had turned into gravel. For a while I had an original Bellows, shattered as it was, but it finally fell apart.

There were not many followers of lithography in those days, and it looked to Brown as if all his work might go down the drain. I suggested that he expand and rewrite his book or write another one. He replied, "It would only sell to a few hundred libraries and to a handful of scattered students, so I would be the loser." I never had the opportunity to see any of his paintings or etchings. He stuck strictly to business. We worked every day for almost three months. He stayed with me constantly. When I went home I could print lithographs. I understood the process.

In my copy of his book he wrote a nice note as a send-off:

Dear Mr. Phillips:

I have enjoyed our work together and I wish you every success in your future use of crayonstone lithography.

Sincerely,

Bolton Brown

Woodstock, New York

Aug 1, 1932.

BOOKS IN REVIEW

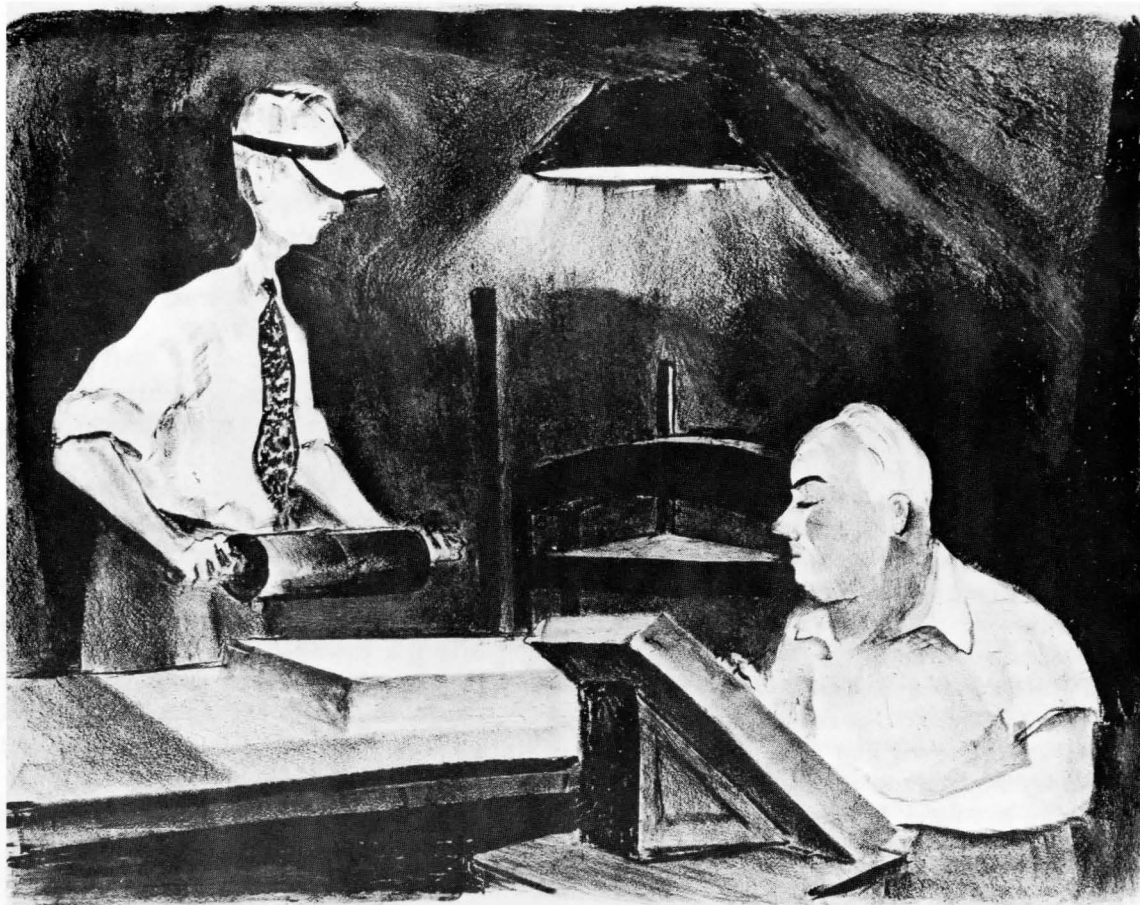
French Lithography, The Restoration Salons 1817-1824. By W. McAllister Johnson.

Published by Agnes Etherington Art Centre, Kingston, Ontario, 1977. 212 pp. \$15.00 (Canadian).

At once delightfully eccentric and a mine of solid information, this publication catalogues the lithographs exhibited at the Paris Salon under the reign of Louis XVIII. The years chosen reflect the fact that lithography made its first Salon appearance in 1817, as an industrial art, and became a recognized sub-category of fine art in 1824. Hence the Restoration Salons afford a sustained and self-contained look at the status and products of lithography during a crucial shift in its character, from its early experimental phase to its full commercial and aesthetic exploitation.

After a sprightly preface by Jean Adhémar, Johnson's introduction comprises a highly entertaining essay on cataloguing—its early history, its methodologies, and its philosophy—followed by a discussion of his own catalogue, explicating its organization and briefly analyzing its contents. By and large, however, the materials are left to speak for themselves, as Johnson leaves most interpretation to his audience. To aid in such interpretation, Johnson follows his introduction with eight important early French documents on lithography, each reprinted in its entirety. Next, the catalogue itself. For each item, the text of the salon *livret* is reproduced. In addition to the information thereby provided, Johnson gives us such standard modern cataloguing data as dimensions and bibliographical citations, plus such niceties as the full date of the *dépôt légal* (i.e., copyright) and—if photographed for reproduction in the catalogue—the Bibliothèque Nationale negative number. As to the reproductions, all single lithographs are illustrated and for the several albums—some of which run to more than 100 images—representative plates have been chosen for illustration. In all, 173 illustrations are provided in the catalogue proper, and several dozen more accompany the introduction or are given as comparative material in an addendum. While these illustrations are for the most part too small to give an accurate idea of "house style," they are of sufficient quality and quantity to allow an excellent review of the contents of these early

(continued on page 45)



Adolf Dehn. (*Artist and Printer*), 1949. 250 × 320 mm. Collection Mrs. James H. Stauss, Colorado Springs.

RUBBED STONES, MIDDLE TONES AND HOT ETCHES

Lawrence Barrett of Colorado

by Clinton Adams

Among the very small number of men who printed lithographs for American artists before 1960, some began their careers in commercial printing, others came to work as collaborative printers after initial training as artists. Among the former are George C. Miller and Lynton R. Kistler, among the latter, Bolton Brown and Lawrence Barrett.

Barrett's work as a printer was done entirely in Colorado Springs where he served as technician and instructor in lithography at the Fine Arts Center school from 1936 to 1952. He came to lithography relatively late in life, at the age of 38, having been confined to bed, the victim of tuberculosis, during much of the time between 1920 and 1934. Once he discovered the magic alchemy of ink and stone, it became the heart and core of his life. He never married and shunned an active social life, practically living in his studio, printing lithographs day and night.¹

LAWRENCE BARRETT'S KNOWLEDGE OF LITHOGRAPHY derived indirectly from the tradition of Joseph Pennell and Bolton Brown. His first experience in the medium

came in the summer of 1936 in a course taught by two visitors to the Colorado Springs Fine Arts Center, Charles W. Locke and Theodore "Ted" Wahl. Locke, who had studied with Pennell at the Art Students League in the 1920s, had become his successor there; Wahl was a student of Brown and, at the time of his visit to Colorado, was working as printer-technician in the graphic arts workshop of the Federal Art Project in New York.

It was taken for granted in that tradition that a sharp division existed between the work of the artist and the printer. At the Art Students League, students drew on stones, the stones were then printed by a technician. Similarly at Colorado Springs. Barrett was the only student in that summer of 1936 who sought to learn the art of the printer. And learn it he did, with such remarkable speed that within a few months it was possible for George Biddle to speak of him as at least equal to "if not better than" George C. Miller as a printer. That was clearly high praise.²

Primary insight into Barrett's work as a lithographer is provided by the lithographs he

printed. They are characteristically small in scale, at their largest about 16 by 20 inches. Most of the editions he printed for artists and virtually all that he printed for his students are in black and white. His work in color, whether his own drawings or lithographs drawn by other artists, is simple in nature, usually limited to two or three colors. He did not encourage students to explore techniques other than traditional crayon drawing until he was certain that they had mastered that, to him, fundamental method.

The new building that housed the Fine Arts Center school had been completed only in the spring of 1936, the year of the summer class taught by Locke and Wahl. Martyl, the Chicago painter and printmaker who studied with Barrett in 1939-40, remembers the shop as "one large room . . . well stocked with equipment. The Art Center itself was a beautiful building and I thought at the time the hand-somest art school I'd ever seen. Barrett's room was light and accessible, opening out into a courtyard." Martyl describes Barrett as "an enthusiast for lithography":

He taught very clearly the method of applying crayon to the stone with little or no experimentation. The only "unusual" technique he allowed was Adolf Dehn's use of the razor-blade, which Barrett thought was OK. Also tusche was used, but otherwise it was straightforward use of the build-up of crayon. I remember that the visiting artists would draw on the stone and then Barrett would roll it up for proofing and throw the discards in a large wastebasket. Students would raid them and obtain bootleg prints. I think he caught on to this and tore them up eventually.

I remember him as being knowledgeable and patient and swift in his movements. He worked fast and consistently. He was tall and very much in command of the press . . . very serious about his shop, lithography, and working hard.³

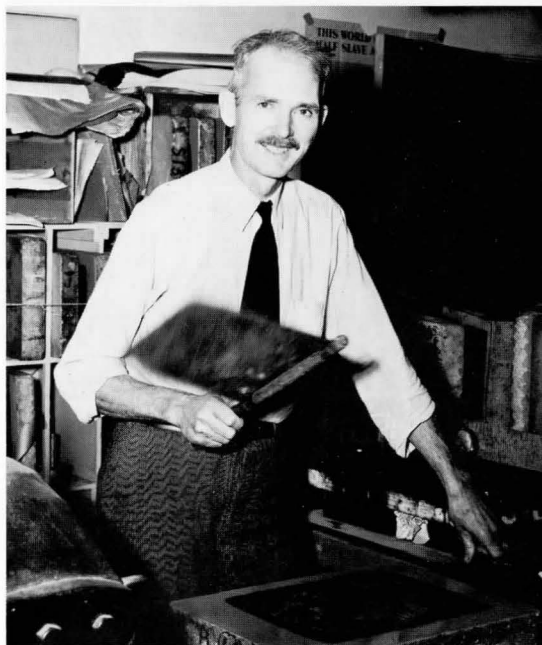
Emerson Woelffer, director of the school in the 1950s, also speaks of Barrett's preference for the slowly built up drawing:

If a student worked less than two weeks on a stone, he wouldn't print it. He said, it takes a long time. The longer you work, the better your lithograph will be . . . There were table easels for the stones . . . When you came to his class you were given a little mimeographed sheet describing the different kinds of Korn's crayons and pencils. You had to gum out a border, he required that. And the main thing—no quickies!

To these recollections of Martyl and Woelffer may be added those of Verna Jean Versa, Barrett's student in the 1940s, and Reginald H. Neal, his technical assistant during the summer of 1941. Versa continued a long acquaintance

with Barrett, extending throughout his life:

He was always gentlemanly, kindly and very proper, in white shirt and tie even while printing. He was reserved even with his students. He seldom said a word, but when he did, it was always very much to the point. He generally avoided making aesthetic judgments, confining himself to technical comment. With



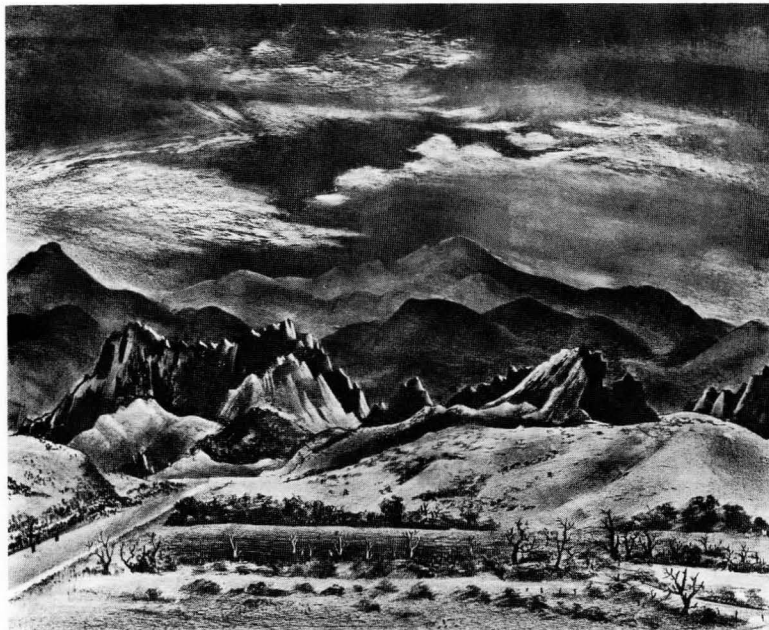
Lawrence Barrett fans a stone dry, c. 1949.

rare exceptions, the students in Barrett's classes did no printing. He etched all the stones and rolled them up. He printed the students' editions, usually about ten impressions, and sometimes printed as many as ten editions in a single day. He kept two impressions from each edition, one for himself and one for the Fine Arts Center.⁵

Neal confirms this memory:

We kept busy from eight in the morning until five in the afternoon printing the work of everyone who was in the class, including prints by resident artists. Unless you were there as a technical assistant, as I was, you learned nothing about printing; all you did was make the drawing. Adolf Dehn told the students how to use the crayons and what techniques

1. See "Lawrence Barrett: Colorado's Prophet of Stone," by Clinton Adams, in *Artspace*, Fall 1978, Vol. 3, No. 4, pp. 38-43.
2. It is characteristic that artists reach different judgments as to printers, some preferring one, some preferring another. Howard Cook, who also worked with both Barrett and Miller, thought much more highly of Miller's skill and experience. Statement to CA, July 18, 1978.
3. Letter, Martyl to CA, May 22, 1978.
4. This and subsequent statements by Emerson Woelffer are quoted from a tape-recorded interview with CA, June 1, 1978.
5. This and subsequent statements by Verna Jean Versa are quoted from a transcribed interview with CA, later edited by VJV, April, 1978.



Adolf Dehn. *Garden of the Gods*, 1940. 340 × 417 mm. Collection Mrs. James H. Stauss, Colorado Springs.

would work. Barrett did the printing and pulled twenty prints from each stone.⁶ Neal recalls that in order to get information from Barrett he had to ask questions:

He would answer them as minimally as he could. But I observed how he put the etch together, how many drops of acid he put in it, and how he counteretched. He would never let anybody touch his roller or do any printing. I assisted him at the press, grained the stones, dampened paper, and occasionally printed my own work.⁷

But despite this air of secrecy, Barrett was not unwilling to share with others his knowledge of lithography. In 1940 he wrote a short monograph, *Techniques of Stone Preparation in Lithography*, which was distributed by the Fine Arts Center to "several hundred museums, art schools and universities." It consisted of an original lithograph, providing technical demonstration of rubbed tones, engraved lines, erased passages, etc., and eleven pages of notes thereon. In his introduction, Barrett said that "the dominant purpose of these words [is] to stimulate toward a greater knowledge, and thence toward inventiveness; in a word to improvise technical solutions in keeping with the problem at hand." The brief and somewhat sketchy account of lithography contained in this monograph served as a basis for Barrett's section of the book which he and Adolf Dehn later wrote together.⁸

Although Barrett characteristically imposed limitations upon his students in the interest of what he felt to be sound instruction for beginners, the professional artists with whom he collaborated⁹ explored more varied ways of drawing, including a "rubbing method" and a

procedure for working into a "middle tone" created with the inked roller. The occasional lithograph drawn with tusche wash indicates his command of that method as well, although he did not encourage it.

In *How to Draw and Print Lithographs* Dehn describes at some length the rubbing method that he used in drawing many of the stones that Barret printed for him.¹⁰ Tones are first laid in with soft crayon, preferably on a stone that has been warmed so that it will accept rubbed tones more easily. Then, using a piece of cloth wrapped around the forefinger and considerable pressure, the crayon is rubbed thoroughly into the stone, so that it no longer lies upon the peak of the grain, but has been pushed down into the valleys. "It is important to realize," Dehn cautions, "that much rubbing of the stone destroys the grain and polishes it. In drawing over the polished gray surface one cannot get much variation of tone, for the tooth of the stone is gone."¹¹ He also points out that the rubbing process, particularly on a warm stone, causes deep grease penetration and that tones hence print darker than they appear on the stone. Dehn prefers to use regular lithographic crayons, number 3 or softer, rather than rubbing ink.

"Developing out of the rubbing method," Dehn continues, "an entirely new and fascinating approach to the stone suggests itself. Instead of drawing with the crayon, it is used to cover the whole stone and then rubbed thoroughly. The drawing is done in reverse—that is,

6. This and subsequent statements by Reginald H. Neal are quoted from a tape-recorded interview with CA, November 17, 1977, later edited by RHN, Summer, 1978.

7. Verna Jean Versa suggests that Barrett's great concern for his fine French leather roller may have been caused by its irreplaceability at that time, during the early years of WW II.

8. Adolf Dehn and Lawrence Barrett. *How to Draw and Print Lithographs* (New York, American Artists Group, 1950). The book consists of two separate sections, "Drawing on the Stone" (by Dehn) and "Printing from the Stone" (by Barrett). Barrett's section is surprisingly brief, comprising only 30 pages of text.

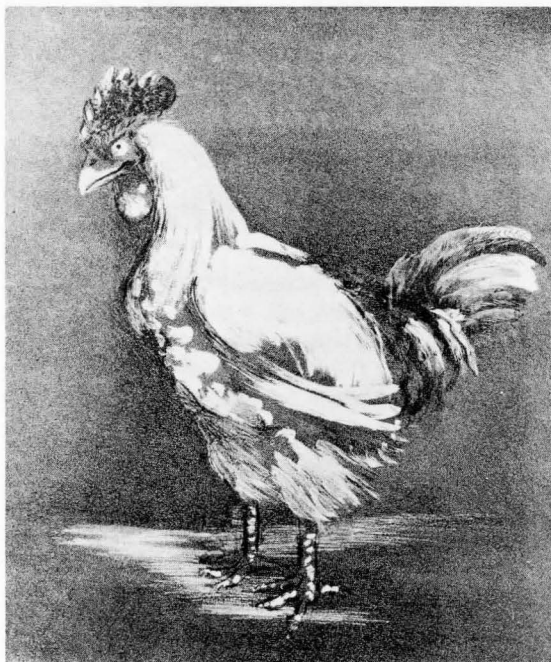
Barrett is also author of the technical article on lithography which appeared in all printings of the 14th edition of the *Encyclopedia Britannica* between 1960 and 1970, Volume 14, pages 112-14.

9. Barrett printed for many noted artists, among them Herbert Bayer, George Biddle, Arnold Blanch, Jean Charlot, Herman Cherry, Howard Cook, Lamar Dodd, Otis Dozier, Yasuo Kuniyoshi, Rico Lebrun, Doris Lee, Henry Varnum Poor and Boardman Robinson.

10. Dehn and Barrett, pages 18-20. Dehn had earlier used this method in lithographs printed by Desjobert in Paris and Schulze in Berlin.



Far left: Detail, *Silver Cock*.
Left: Detail, *Rabbit*.



going back to lighter grays and white.”¹² Tones are lightened or scraped out with needles, razor blades or erasers, lifted out using a sheet of gelatine, or removed with solvents. The rubbing method is thus in some degree parallel to the *manière noire*, long used in lithography; it differs from that method in that it begins not with a solid black (created with ink or asphaltum) but with a rubbed crayon tone, perhaps of different value in separate areas of the image.

Dehn frequently used a double-edge razor blade, bent slightly between the fingers, to lift the rubbed crayon tone from only the peaks of the grain and, as is evident in his lithographs, achieved great virtuosity in this method. He also developed high skill in use of the ink eraser, producing some very effective textural passages, quite unlike those created in other manners of drawing.

Barrett, in discussing procedures for etching drawings on stone speaks of “two types of

Above left: **Lawrence Barrett**. *Silver Cock*, n.d. 264 × 217 mm. Collection Mrs. James H. Stauss, Colorado Springs. Above: **Rico Lebrun**. *Rabbit*, 1945, 556 × 450 mm (paper). Collection Santa Barbara Museum of Art, Artist-in-residence fund.



Lawrence Barrett and Rico Lebrun, Colorado Springs, 1945.

11. Ibid., page 18.

12. Ibid., page 22.

lithographs." Type one is a single crayon drawing in which the crayon rests upon the peaks of the grain; type two is a rubbed drawing, as described by Dehn. "When you etch a No. 2 type stone," Barrett wrote, "bear in mind one important fact about crayons and Tusche:

Disturbing the crayon or Tusche area in any way tends to separate the grease from the solid part of the crayon. A great part of the solid matter and some of the grease is driven down into the valleys, but some of the grease remains on the peaks, even though they look solid white. The more rubbing you do the more grease is spread into the porosities, especially on a more porous yellow stone. As you know, grease alone will attract the ink and print. That is why any disturbed area on a stone must receive a heavy etch to dissolve the separated grease, so that all the white areas and dots which you wish to remain white will print so.¹³

A color film produced by the Colorado Springs Fine Arts Center in the summer of 1940 vividly demonstrates that Barrett indeed meant a **heavy** etch.¹⁴ The film first shows Adolf Dehn at work, sketching from the landscape, then drawing the stone from which his lithograph, *Garden of the Gods*, was later printed in an edition of 60 impressions. Using the rubbing method, Dehn is seen adding in soft black crayon (numbers 1 and 00) the full blacks in the upthrust rocks, and using an eraser to develop passages in the cloudy sky. The mountains and foreground are defined by lightening tones with a razor blade. In the film the stone is seen to froth furiously as Barrett pours on the etch, moving it around with the palm of his hand. To those accustomed to mild, Kistler-type etches, Barrett's etch is startlingly strong. It might be expected that so violent an etch would literally boil the work from the stone. That it did not do so is explained by the character of the drawing, developed in the rubbing method with the softest of crayons, hence very greasy, and capable of withstanding an etch which would serve to obliterate a traditional crayon drawing.

A technique not much used by Dehn but favored by Barrett was that of "drawing into a middle tone," a process he used with great effectiveness in many of his own lithographs. He describes the preparation of the stone using a stiff ink with a composition roller, and emphasizes the importance of completing the drawing upon such a stone within a few hours after its preparation, before the ink can harden.¹⁵ Most of the lithographs Barrett printed for Rico Lebrun and Jean Charlot made use of such middle tones, created with a roller. "We did together some of my most successful color prints," Charlot recalls:

He also had a unique skill in preparing pre-



rolled stones for black and white. The margins were gummed and with a single roll he inked the image area to a medium gray, equally distant from the full black of tusche and from the full white obtained by scratching. I admired him for that. I was less enthusiastic with his complex way of etching, augmenting or diminishing the etch to weaken or strengthen local areas to taste, to his taste, but then he was a true artist and had to leave his mark.¹⁶

Three of the seven lithographs Charlot made with Barrett in 1947 and 1948 were multi-color. Here, Barrett's working methods left something to be desired. "He punched holes in my paper for registration, which annoyed me," Charlot was later to comment.¹⁷

Perhaps with an unspoken hint that commercialism did not befit art, his way of registering color upon color was by punching holes in the

13. Ibid., page 101.

14. Two separate films were actually made, both in color. One, photographed by Mitchell A. Wilder in 16mm is approximately 900 feet in length, well-edited, with titles. This film shows the entire process, from Dehn's initial sketches to the signing of the finished edition. The second film, shorter and in 8mm was apparently Barrett's own. It concentrates upon the technical processing of the stone, some sequences being similar to those in Wilder's film, others quite different. At Barrett's death (May 26, 1973, at the age of 75) he left this film to his friend and fellow artist, Larry Heller, who in April 1978 gave it to the University of New Mexico for inclusion in the Tamarind Archives of Lithography.

15. Dehn and Barrett, pages 102-03.

16. Letter, Charlot to CA, July 16, 1978.

17. Morse, Peter. *Jean Charlot's Prints: a catalogue raisonné* (Honolulu, University Press of Hawaii, 1976), page 282.

Facing page: **Howard Cook.** *Tio Vivo*, 1949. 423 × 335 mm. Collection University of New Mexico Art Museum. Right: **Lawrence Barrett.** (*Horses in Winter*), n.d. 209 × 270 mm. Collection University of New Mexico Art Museum.



margin the better to see the registering marks or even cutting with scissors large triangles whose point coincided with the registering cross.¹⁸

It is an index of recent technical progress that primitive registration methods were still commonplace in that time, even among printers of Barrett's skill and experience. Nor were Barrett's own color lithographs of any great technical complexity. Late in his life, when in 1969 he sold his personal press, stones and other equipment to Verna Jean Versa, he encouraged her to develop color lithographs, working freely on two stones without a key drawing or use of red-chalk transfers. "Barrett's ultimate praise," she recalls, "was for a rich, black and white print. To achieve this he suggested printing the blacks and delicate grays separately" from two stones.

Barrett's most active years as a printer were during the 1940s. He printed for many artists other than the continuing faculty of the Fine Arts Center, and "had quite a brisk business," Mitchell A. Wilder relates, "with artists elsewhere." Wilder, former director of the Fine Arts Center, adds that in the late 30s and early 40s Barrett did a good deal of printing for artists in New Mexico: "I specifically remember boxes in which stones were shipped back and forth from New Mexico, presumably by motor freight or bus. I am sure these were frequently in and out of Taos . . ." ¹⁹

Beginning in the late 1940s, things began to turn downhill in the Fine Arts Center school. There were enrollment problems as the wave of postwar veterans receded. Boardman Robinson, the school's director and leading spirit since 1931 was forced to leave in 1947.²⁰ Jean

Charlot's stay as his successor was brief and unhappy.

In the winter of 1947-48, working collaboratively with Barrett, Charlot drew the stones for a three-color lithograph, *Mexican Kitchen*:

They wanted me to do a print for the members [of the Fine Arts Center]. But there was a Board of Directors, and at the time they did not really like me, so they decided to refuse this print. It's a good print. I think there is something democratic about it, and the trustees were not especially democratic. You know my feeling of "art for the people," and this is very much it . . . ²¹

The minor furor over Charlot's lithograph was but one of many during those troubled years. For Barrett the difficulties culminated in 1952. His contract as technician and instructor in lithography was not renewed, and although he had a press and equipment in his home studio, he did little printing thereafter. Eric Bransby, for whom he worked for some years as an illustrator in a special unit at Ent Air Force Base, believes his final lithographic collaboration may have been with Randall Davey on a print in 1960.²² □

18. Letter, Charlot to CA, July 16, 1978. Charlot speaks with great warmth of his experience with Barrett: "He was a rare combination of artist and artisan, rarely found as totally balanced in one individual. I remain grateful for the days I could work with him."

19. Letter, Wilder to CA, June 29, 1978.

20. Many conflicting views exist with respect to the circumstances that surrounded the departure of Robinson (and others) from the Fine Arts Center. A residue of bitter feelings remained for many years.

21. Morse, page 282.

22. Letter, Bransby to CA, May 15, 1978.

THE CORRUPTION OF NORMAN ROCKWELL

by Joshua Kind

Industrial society, unlike the commercial, craft and agrarian societies which it replaces, does not need the past. its intellectual orientation is towards change rather than conservation, towards exploitation and consumption. The new methods, new processes . . . have no sanction in the past and no roots in it. The past becomes, therefore, a matter of curiosity, of nostalgia, of sentimentality.

J.H. Plumb, *The Death of the Past*

FOR ALL THE SINCERITY of Norman Rockwell's subject matter and handling—for all the insistent authenticity of his Americana—for all the intensity with which the game of art as value, as love, as cash is played with that large body of works known as Rockwell "prints," **all**, no exceptions, **all**, every Rockwell "print" ever made or sold is, to use our own coinage, *FAUX-GRAPHIQUE*. That is these prints are all made by photographic reproduction from either a Rockwell painting or drawing. And so these prints are *false-graphics* if by a "fine art" print one understands as standard definition, the artist alone created the printing surface and no photo-mechanical or mechanical technology was involved in the image-production. An original print (*estampe originale* in French), in no way exactly reproduces a work which already exists in another medium.

The newspapers explode with advertisements for these Rockwell prints. What is offered is usually described as lithographs, collotypes, prints, *Saturday Evening Post* covers, and the prices asked for single works which have become especially sought after have now reached from \$8,000 to \$12,000. Upon examining the publisher's certificate labelled "Print Documentation" which would accompany one's purchase of, for instance, *Gaiety Dance Team* (released in May, 1978), one finds the collotype "print" described with absolute clarity and the issue of "authenticity" is sharply spelled out:

The collotype is the most color-accurate reproduction process known. The process utilizes a gelatinous photographic plate which breaks down after a limited run. This collotype is a reproduction from an original oil painting by the artist. The artist was not directly in-

involved in its production except for the correction and approval of proofs. This is not an original graphic . . . An unsigned limited edition of this print exists from the same plates, but is easily distinguishable from the limited edition by a printed copyright notice and title printed below the image.

The gelatinous surface of this commercial printing diminishes greatly the obvious dot-effect of screen printing. But collotype is not an expensive or arcane process: notice in the documentation above that the "plate breaks down after a *limited* run," and yet, ". . . an *unlimited* edition of this print exists from the same plates . . ." How can that be? No problem. When the plates break down, another set are made from the photographic color-separation sheets. The Metropolitan Museum of Art, for instance, offers superb *collotypes* of Renoir and Van Gogh for \$15.00; and while the *signed Gaiety Dance Team* sells for about \$2,000, the unlimited collotype edition, *unsigned*, but exactly the *same image* (if the printer has been careful), sells for about \$20.00!

Ironically enough, it is seemingly only the conjunction of a Rockwell signature with the collotype image that makes that autograph valuable. On the New York autograph market, any Rockwell signature, even on his own recent, fully hand-written letters, is worth less than \$25.00. But in fairness, at least to repeat what is bruited about, Rockwell himself had refused to sign several editions of these collotypes, apparently feeling that the reproduction was not adequate. On the other hand, just such a story might be used by a dealer to stress the "authenticity" of the *signed* Rockwell; just so the claim is made that an unsigned collotype is not as clear, as well-printed as a signed example of the same image.

This situation—to keep as strong as possible the sense of a specific, individual, and warm creator next to a product—is perhaps reminiscent of the products of the Walt Disney studios; there, no signature other than "Walt Disney" was ever permitted to appear on the studio's visual and clearly *hand-drawn* products—obviously created by hundreds of "individuals." On this same basis, perhaps one may predict the success of the recently launched Nelson Rockefeller Collection. His authenticating "hand" via the 96 objects so far reproduced from his vast art collections, will somehow ease the unease of buyers about their entrance into our "age of reproduction."

Now the "Print Documentation" for a recent Rockwell "lithograph," *Settling In*, is less clear: the paragraph "Involvement of Artist" nowhere uses the word "reproduction" or the phrase "not an original graphic."

The artist created the image as a drawing on paper. The image was then transferred by a chromist by hand onto separate lithographic plates at Atelier Desjober, Paris. . .

It appears that a sense of mystery is desired—through the use of “chromist” and through the obvious evasion of the issue of either photographic or manual redrawing of Rockwell’s drawing for lithographic reproduction.

Rockwell himself could not have considered any problems with the commercial, photographic reproduction of his paintings. After all, he had been involved with “reproductive” art all of his working life; as an illustrator, best known for his *Saturday Evening Post* covers and many other illustrations, he must have always thought of his handiwork as available to a large public, both through its subject matter, and commercial reproduction. For instance, during World War II, “prints” of his *Four Freedoms* were given as mementos to the more than one million people who saw the four original pictures and brought more than 132 million dollars’ worth of war bonds during their nation-wide tour. And so, in the early 1950’s, when publishers began to issue photographic reproductions of his works, in limited editions, and signed and numbered like “fine art” prints, there was both the precedent of Rockwell’s career and older European tradition. (Even as late as 1969, when the Chicago-based Jack Solomon, director of Circle Gallery, published the first of the 129 Rockwell prints he was to produce, the work created no livid excitement and was difficult to sell at the \$100 level.)

The tradition of the art-“copy” (forgeries are not the issue here) within the graphic arts is very old. Only 30 years after the creation of a “fine art” of engraving, one Israel van Mecenem was engraving reproductions of others’ works in the later 15th century in Germany. In contemporary usage, *estampe* usually describes a hand-made graphic work, using no photography, that is a copy of someone else’s work in some other medium—oil, gouache, etc. Some especially well-known *estampes* are the fifty made by Jacques Villon between the two wars after works of Picasso, Matisse, et al. In a sense, an *estampe* is like the more recently coined concept of the *Multiple*—a three-dimensional reproduction which may involve some printing processes, of an original work presented by the artist to an artisan-manufacturer. Well-known examples, of the hundreds made so far, include Oldenberg’s *Soft Drum Set* and the recent D’Arcangelo wind-shield *Minnesota Morning*.

But *estampe* has nothing to do with the Rockwell scene—except that his reproductions

have all been called *prints*. And yet there is also a French equivalent, equally elegant and thus perhaps shielding the “reproductive” essence of the process—*pochoir*—essentially a colotype which may have stencil and other hand additions; signed and numbered editions, usually up to 300, issued by, among others, the Gallerie Maeght, do exist of works by Matisse, Picasso and others. (That gallery continues, incidentally, to issue *estampes*, made by artisans by hand, both signed and unsigned by the artists of the work reproduced.) Unfortunately, that same word *pochoir* can also be used for pure stencil processing, like silkscreen, with no reproduction involved; for instance, a recent Larry Zox print portfolio is so labelled by its publisher, the Gladstone gallery in New York. (A partial end to ambiguity is possible, other than by careful reflection and knowledge, by perusing Felix Brunner, *A Handbook of Graphic Reproduction Processes*.)

In looking at the “lithographs” of one Mel Hunter, also published by the Circle Gallery, I found the curious phrase “plated by contact” used—in the descriptive literature accompanying the print—to define the process by which his prints were produced. This literature avows that the “lithographs”—which is traditionally hand-signed and numbered in pencil and yet appears to the eye to be a photo-reproduction of a fairly complex painting of trees, twigs, shadows, shrubs and horses—is *not* a photographic reproduction, but “hand-drawn lithography.” I mention this work, because it may be an intermediate example of the *ongoing corruption* (and perhaps even the ultimate future decay) of “fine art” print-making and its gradual subsumption by photography, or photographically supported processes.

In an article in *American Artist*, October, 1977, “Revolution in Hand-Drawn Lithography,” Hunter describes in precise detail, and pride, and with 25 photographs, the “Mylar method” which allows “anyone to do lithography” with no fuss.

Simply put, Hunter draws his images on transparent Mylar sheets, using separate sheets for individual colors, and then exposes his images onto light-sensitive, emulsion-covered aluminum plates—commercial, photo-offset litho-plates—on a vacuum table plate-maker. All this, although never clearly stated in the article, is precisely the process used by commercial, professional offset printers to produce their printing plates. The only “traditional (fine art)” aspect here appears to be that the plates are hand-inked with a litho-roller, and the editions may be small. (But remember, that exactly as with Rockwell collotypes, there is no

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It is destructive to the future of art—and even its past—if objects integrally non-art are bought and sold and thought about as if they were art.

physical reason that the edition cannot be continued *ad infinitum*, or even *ad nauseum*: even if the image-producing surfaces “break down,” another can be quickly made—it is all photographic.) The “revolution” here is really the “take-over” of the fine arts by a commercial photo-plate-making process: Son of Pop Art—Pop process.

The artist here, as in photo-silkscreen, although he does prepare the image, does not touch the reproducing surface or literally create it. The Mylar method is really like camera-less photography—like contact-sheet printing: it is lithography only by virtue of the printing process, but it ain’t “fine art” lithography where by my definition (and several others as well, including the Print Council of America), you have to touch that surface and manipulate that messy and mysterious stone. And still, whether it is embarrassment, both ethical and artistic, or more likely commercial “know-how” and an understanding of the large public’s need for phrases and key-words that offer traditional security, the Hunter “prints” are labelled “lithographs.” Incidentally, this Mylar process is like a bringing-up-to-date of the mid-19th century *cliche-verre*, to which contemporary attention will be drawn by an exhibition in Spring 1979 at the Detroit Institute of Arts. The *cliche-verre* process was made by contact onto light-sensitive paper lying beneath glass with a drawn image.

Exactly this same Mylar method was used for the widely advertised “original lithograph” *Nureyev* by Jamie Wyeth. The descriptive literature accompanying the print offers, wonderfully enough, that “a maquette” was *supplied* by the artist and that “a model was made from the maquette”—it’s *faux graphique* as far as anyone should be concerned: a Wyeth painting is *reproduced* here, *without* a camera or possibly with a photographic separation of three colors of the work onto the Mylar sheets. The use of the phrase “original lithograph” would not only appear inaccurate—it would appear fraudulent.

At this point, we knowing sophisticates, who until now may have stood by and simply smiled, seeing these nonsensical activities in the art-boutiques as a part of uneducated grovelings towards the art-love and understanding already securely ours, had better snap-to and pay attention. This same loose usage of graphic art categories and designations—whether knowing or unintentional (is that possible?)—also exists in the arena of more “avant-garde” high art. For instance, all of the late Richard Lindner’s “prints” (with perhaps one exception), are reproductions *printed* via lithography or silkscreen, of his paintings; the same may be

said for the many “lithographs” of Alexander Calder—for the most part, these are numbered and hand-signed *reproductions* of his gouaches. And so on: Oldenberg and Chagall “lithographs” should be looked at closely; so should Alber’s silkscreens and embossments.

Speaking of silkscreens, it is with that brilliant graphic process that the works of the most recent “avant-garde” phenomenon, photo-realism, have hit the print world. In the recently published catalogue, *Photo-Realist Printmaking*, by the Louis Meisel Gallery, New York specialists in photo-realism, every print so far published by such artists is listed. No “technical” production information accompanies the illustrations—our “reputable” art world is even more circumspect than the Rockwell publishers in that regard—and only in private conversation can one learn that most of the silkscreen prints were produced as photo-silkscreens, made—as reproductions(!)—from the original paintings by artisan professionals working with electronic-registration to produce 16 and 20 color silkscreens. If John Kacere, the “*tushe*-master,” may be included in this group, his recent “lithographs,” so clearly saleable, are even further from graphic-truth: they appear to be color, offset, screen, prints—i.e. color prints made so cheaply that their dot pattern is easily visible, like the color illustrations in an ordinary art book, and yet selling in three-digits, as if they were “real” prints.

In February of 1978, the Merrill Chase art gallery in Chicago called a halt to its years-long sales of the “prints” of Norman Rockwell; they sold out what was in stock, but apparently bought no more for re-sale—to the consternation of hundreds of their previous and present customers. This was all the more strange since the print sections of Merrill Chase galleries are filled with Mylar-method lithographs and photo-mechanical silkscreens of works by many artists other than Rockwell. If any reason was given for this stoppage, it was that the future market for the prints was not stable, in view of their very rapid rise in price. But even more meaningful, given that the gallery under the old Kovler Gallery’s print director, Ivo Kirschen, had begun to establish itself as a major old/modern master “fine” print dealer, was the possible embarrassment of the Rockwell reproductions selling for more than some older fine arts prints. In most galleries selling Rockwell prints, there is no such conflict between authenticities.

It is doubly ironic that Rockwell *images* (which in themselves speak for individuality, humane sentiment, and even personal handicraft), should have become associated, as a result of their *reproduction* by impersonal

photomechanical means, with my post-modernist anxiety about the integral nature of art. It is destructive to the future of art—and even its past—if objects integrally *non-art* are bought and sold and *thought* about as if they were art. Paradoxically Rockwell's *faux-graphiques* represent an American mythological era which is convincing only because his images totally side-step the onrush of urban and industrial society. Yet full understanding of the present significance of Rockwell's prints comes only with insight into their schizoid-like existence and Rockwell's consequent full absorption into our post-modernist turmoil: a Massachusetts Yankee in King Solomon's Court. □

REVIEW: French Lithography

(continued from page 35)

salons. Finally, in a series of most valuable appendices, Johnson provides various indices and concordances to both the salon *livrets* and his own catalogue, so that one can locate material by printer, artist, subject, or title.

From this wealth of information, numerically one finds that at the Salons of 1817, 1819, and 1822 there were 24, 27, and 26 exhibits of lithography, respectively, while at the Salon of 1824 that quantity leaped to 104, a figure exceeded only once (in 1831) in the succeeding Salons through 1870. As for the number of exhibitors, this too dramatically increased at the Salon of 1824, to a total of 28, after only 3, 9, and 5 had sent works to the first three salons at which lithographs were represented. Such increase may be explained both by the larger number of works exhibited and by the fact that artists began in substantial numbers to submit their own works, whereas in earlier salons most lithographs were sent in by printers or, in some instances, publishers. At the Salons of 1817, 1819, and 1822, out of the total of 77 exhibits of lithographs, 68 were submitted by printers (52 of them by Engelmann, which gives an indication of his early public dominance of the medium in Paris).

Here, an important utility of Johnson's catalogue manifests itself: namely that he is extremely punctilious in giving full information not only about who drew on the stone, and who was responsible for the original image (in the vast majority of cases, the two being different), but also about where the various lithographs were printed. This lamentably under-published (and under-appreciated) data affords important insights into the close-knit world of early lithography, when only a relative handful of presses were available to those who wished to

adventure the still-young medium. Much information hitherto almost impossible to derive may now be conveniently extracted from Johnson's indices. One quite easily establishes, for example, that Carle Vernet was printed by both Engelmann and Lasteyrie, the archrivals of early French lithography.

Beyond such insights into the "social history" of lithography at this time, a most important contribution of Johnson's catalogue is its correction of our accepted view of what early lithography was all about. We find that, two decades and more after its invention, lithography was—with isolated exceptions—still considered and used as a reproductive medium *par excellence*. Old and modern masters, portraits, subject pictures, and especially landscapes and architectural views were all lithographed for the delight and education of what must have been an audience both vast and enthusiastic. Thus while modern critical attention has focused upon original masterpieces by such exceptional artist-lithographers as Gericault, here is given a quite different (and historically more accurate) image of the medium. Within the relatively rarefied atmosphere of the Restoration Salons, the works of over 100 different draughtsmen were exhibited, which vividly evidences the almost frenetic bustle of the earliest lithographic workshops.

In *Eccentric Spaces*, Robert Harbison disparages catalogues as being "naturally rubbishy" and covering "a little loveliness with a mountain of unwanted stuff." For anyone interested in early French lithographs, Professor Johnson's catalogue gives the lie to this characterization: every particle of the information he provides is positively to be treasured. Johnson is reported to be working on a critical repertory of all graphics at the French Salons from 1763 to 1825. On the basis of this valuable and fascinating catalogue of lithography at the Restoration Salons, one eagerly awaits the results of his current study.

PETER WALCH

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**Additional book reviews
appear on page 55.**

XEROGRAPHIC TRANSFERS

by Toby Michel

TRANSFER METHODS have been used in lithography since the beginnings of the process.¹ Traditionally, artists using these methods have drawn on paper—both specially coated and uncoated papers have been used—with lithographic crayons and pencils or have applied tusche washes (usually solvent washes) with a brush. The image on the paper has then been transferred to a stone or plate for printing. Modern technology has added to the artist's repertoire new sources of imagery derived from photographic illustrations in printed material, and such images have assumed an important role in the work of many artists. Recent experience suggests that the xerographic processes provide a most versatile and reliable means of making transfers from such sources, superseding the earlier methods described in TBL, "Transfer from photographic reproductions," page 253.²

Modern copying machines are now widely available. Hardly an organization or business is without one, and many "copy shops" operate independently. Artists thus have at their fingertips a new tool through the use of which an enormous range of imagery may be incorporated into their work. Anything that can be placed on the glass plate of a copying machine can serve as a source of images: not only "flat" material—photographs, books, magazines and newspapers—but also objects of every sort, even the artist's own hands, hair or face. Artists can collage together whatever may interest them, combining disparate things, incorporating them into images or using them together with traditional drawing techniques. This technical innovation thus allows use of photographic images without the bother related to use of negatives, light-sensitive materials and darkroom procedures.

Essentially, the material used in xerography is a kind of plastic. Called *toner* within the copying industry, this substance is attracted to a piece of ordinary paper through an electromagnetic process, creating an image which is a duplication of its source. The copy then travels through two heated, oiled rollers, which seal

the toner to the paper, and then emerges from the machine dry and smudge resistant. If the copy does not pass through the rollers, the toner will easily wipe off the paper.

When transferring a xerographic image on to a lithograph stone or plate one proceeds, so to speak, in the opposite direction. The toner is detached from the paper in order to form an image on the printing element.

To make a xerographic transfer on to a stone, assemble these materials:

- a freshly grained stone.
- regular gasoline in a safety can.
- Webril pads or clean rags.
- soft thick paper to be used as backing.
- gum arabic.
- water and sponges.
- a leather roller and black ink rolled out on a slab.
- a freshly made xerographic copy of the image to be transferred.

With all materials at hand, proceed as follows:

1. Place the stone on the press.
2. Place the xerographic copy in the position desired, image side down.
3. Use small pieces of masking tape, no larger than a fingernail, to hold the copy in place. Do *not* use large pieces of masking tape because the pressure of the press will adhere them firmly to the stone, making them difficult to remove. Additionally, the glue left by the tape will pick up ink during roll up, so the less tape the better. Of course, if masking tape were to cover any part of the image it would act as a stop out.
4. Moisten a Webril pad evenly with gasoline.
5. Use the moistened pad to dampen the back of the copy until the image becomes visible. Do not soak it unnecessarily as this will cause the image to become muddy.
6. Position a backing sheet and the tympan.
7. Run the stone through the press six times, three forward and three reverse, using moderate pressure.
8. Remove the tympan and the backing sheet, then peel up one corner of the copy. If the image on the stone is dark grey, the transfer is successful thus far. If the image is weak, blotchy or salty, remoisten the copy with gasoline and run it through the press twice again. Because gasoline is an aromatic hydrocarbon, it evaporates rapidly; steps six, seven, eight and nine should thus be completed rapidly.
9. Remove the copy and rub gum arabic over the stone for one minute with a sponge.
10. Remove the gum with water, sponge tightly and begin slowly but firmly to roll up the stone.
11. When the image reaches a desired rich-

Toby Michel completed study as a Tamarind Master Printer in May, 1979. In this article he reports upon his research in use of xerography.

ness, stop and clean the stone with hydrogum and magnesium carbonate.³

12. Wash off the hydrogum and dry the stone; apply rosin, then talc, and buff into the ink.

13. Etch the image with five drops of nitric acid in thirty ml. gum arabic. Buff down tightly and let the stone rest for thirty minutes.

14. Re-gum the stone, buffing down tightly; when dry, wash out with lithotine.

15. Rub in a heavy coat of asphaltum and roll up the image in black.

16. Pull proofs of the image until a desired richness is reached.

17. Apply rosin and talc, buffing in well.

18. Apply the second etch, again five drops of nitric acid in thirty ml. gum arabic, with additional spot etch as required in dark area. Buff down the etch film tightly. At this point the stone may either be printed or, alternatively, stored under the etch.

A method similar to the above may also be used when working with zinc or aluminum plates, although with a few procedural differences. For transfers to aluminum, steps 1 through 11 remain unchanged; then proceed as follows:

12. Wash off the hydrogum and dry the plate; buff talc into the image.

13. Etch the plate with a 50:50 mixture of tannic acid plate etch (TAPEM) and gum arabic.⁴ Allow the plate to rest under the dried down gum film for fifteen minutes.

14. Re-gum the plate.

15. Wash out the image with lithotine, then with lacquer "C" solvent and cotton pads until the pad remains clean.

16. Rub in a coat of blue lacquer "C", buff tightly and fan dry for two minutes.⁵

17. Rub in a coat of asphaltum and buff out smoothly.

18. Wash off the gum stencil and roll up the plate.

19. Pull proofs of the image until a desired richness is reached.

20. Clean the plate with hydrogum and magnesium carbonate, then re-etch with the 50:50 mixture of TAPEM and gum arabic. The plate may now either be printed or stored.

It is essential that transferred xerographic images be rolled up in lacquer on plates, especially on aluminum plates, as the grease reservoirs are minimal. Unless the image is in lacquer there is great danger that the image will be burned at step 18. The procedures given for aluminum also apply to zinc, with the substitution of a 50:50 mix of hydrogum and cellulose gum for the TAPEM and gum arabic mix.

Standard methods of etching and counter-etching apply throughout these procedures, as

do all standard methods for the processing of additions and deletions. The artist can draw directly on the stone or plate with crayon or tusche after the transfer has been made but before initial roll up of that transfer, i.e., between steps 8 and 9. When this is done, however, step 10 is postponed; thus the transferred (xerographic) portion of the image will roll up weakly; as not enough toner has been transferred to permit a wash out. A preferable procedure is to process and roll up the stone or plate (steps 9, 10 and 11) then to counteretch and make additions and go on to the second etch (step 12).

When the xerographic copy used in the making of a transfer has areas of middle grey, they will usually roll up as blacks. Xerographic transfers tend to be higher in contrast than either the original or the copy. Light grey tones accept ink and print in their range with reasonable accuracy. The artist should by trial and error discover the degree of contrast that will provide a workable tonal range. In general, images that are free of dark background tones should be chosen, as such tones will become blacks in xerographic copies and will transfer as such. If necessary, to avoid unwanted background tones, the artist can cut up and collage elements of an image before making the copies that are to be used for transfers.

Transfers over Transfers

A VARIATION IN APPROACH which may at times prove useful involves superimposition of a second xerographic image upon one previously transferred. Because this technique puts the original image in jeopardy, lithographers using it are in need of considerable skill. The procedure, which does not require counteretching,⁶ is as follows:

1. Complete a xerographic transfer on stone using the procedures already described.

2. Re-gum the image and wash it out with lithotine.

3. Continue the wash out with lacquer "C" solvent until the Webril pad is clean.

4. Rub in an even coat of blue lacquer "C." Buff smoothly and fan dry for two minutes.

5. Rub in a heavy coat of asphaltum. Wash off the gum stencil and roll up the image.

6. Apply rosin and talc, buffing well. Give the image a strong etch, ten to twelve drops of nitric acid in thirty ml. of gum arabic, seating the image firmly into the stone and establishing a strong adsorbed gum film. Let the buffed down stone rest for one hour.

7. Re-gum the stone and fan dry.

Recent experience suggests that the xerographic processes provide a most versatile and reliable means of making transfers.

8. Wash out the image with lithotine until clean.

9. With *distilled water*, wash off the gum completely and fan dry. The image is now in exposed lacquer.

10. Position the second xerographic copy on the stone and tape it in place.

11. Apply gasoline and run the stone through the press six times.

12. Remove the tympan and backing, then the xerographic copy.

13. With distilled water, sponge tightly and roll up immediately.

14. Continue to roll ink on to the images until both the first and second transferred images are full. Proofing will verify that the original image has not been damaged.

15. Apply rosin and talc. Etch with five drops of nitric acid in thirty ml. of gum arabic. Buff down tightly and let the stone rest for thirty minutes.

16. Re-gum the stone and buff tightly.

17. Wash out with lithotine, then with lacquer "C" solvent. Rub in a new coat of blue lacquer "C" and fan dry for two minutes.

18. Rub in asphaltum.

19. Wash off and roll up.

20. Proof the stone until the desired richness is reached, then re-etch.

It is preferable that this procedure for superimposition of xerographic images be used on stone. The grease reservoirs which can be established on stone serve to prevent blinding of the image when the gum is washed off and the stone is dried. The oleophobic character of aluminum plates increases the chance than an image might be burned. Even so, with the use of a hard lacquer such as lacquer "C" thoroughly and tightly applied, and with careful and rapid procedures in making the transfer, plates can be used successfully.

Other Methods and Materials

AS A PART OF OUR RESEARCH at Tamarind, experiments were made with methods and materials other than those that have been described. Many solvents were tested. Lithotine will not work to move the toner from the xerographic copy to the stone or plate, whereas lacquer "C" solvent and lacquer thinner work all too well. Both are more volatile than gasoline, both dissolve the toner too fast, so that unless precisely the right amount of solvent is used the image will blur before it can be run through the press. The Xerox Corporation makes a cleaner for its machines which appears to be a happy medium between gasoline and a more volatile solvent, but it is not sold in the

open market. Cleaning solvents such as Hancolite and Varn work marginally, transferring only the darker portions of the copy. Among available solvents gasoline is thus the best and most readily available. That it should be used with adequate precautions against fire is obvious.

Tests were also conducted with copies made on different kinds of paper: thick rag papers, medium weight papers such as Radar Vellum, heavy bond typing papers, and the thinner copying papers normally used. It was found that all papers work reasonably well, so that there is no purpose in using special, heavy papers. It is suggested, however, that xerographic copies be made on paper of at least twenty pound weight, as this thickness—greater than that of the very thin papers used in some copying machines—acts as a cushion with the backing paper, providing a crisper transfer. Traditional water soluble lithographic transfer papers do not work at all. The sealing oil applied in the copying machine by its two rollers prevents the copy from leaving the paper. Water, applied through the back of the paper, is trapped inside its fibre, and the result is a mush of paper and image on the stone.

A number of interesting possibilities derive from use of xerographic copies made on Mylar. These may be made using either a Xerox 9200 or 9400 copier. These machines have single sheet feeding systems which permit insertion of Mylar (.003 thickness) as well as different kinds of paper (the Mylar must be cut to standard dimensions, 8½ by 11 or 11 by 14 inches).⁷ When the Mylar is fed through the machine, the copy will be made on it, free of any background except the image. This Mylar copy can now be used as a reversal negative, making possible a photographic plate which is the opposite of the source image in every tone and value.

Another possibility—with thus far interesting but inconclusive results—involves drawing directly on to the xerographic copy with lithograph crayons prior to transfer. When such additions are drawn with the softer crayon (1 through 3) the gasoline used in making the transfer tends to dissolve them; the harder crayons (4 and 5) tend on the other hand to act as stop outs, rolling up as negative areas in the image. The amount of gasoline used in making the transfer critically affects what will happen and consistent results are difficult to achieve. It is probably best to make hand drawn additions either by adding them to the image before copying it xerographically or, later, to the stone after making the transfer (with requisite counteretching and reprocessing).

It is not necessary to use a press to effect a

(continued on page 55)

Copies made on a Xerox 3107 copier, a machine which has the advantage of large scale copying, must be processed in a manner different from that given in the body of the article. Such copies are insoluble in gasoline; only lacquer thinner can be used. Steps in processing transfers from copies made on the 3107 copier are as follows: (1) when the copy has been placed on the printing element, cover it with a sheet of newsprint larger than the copy; (2) cut a second sheet of newsprint, also larger than the copy, and a sheet of Mylar still larger than the newsprint; (3) soak this second newsprint evenly with lacquer thinner; (4) place the soaked newsprint (lacquer thinner side down) on top of the dry newsprint and the copy beneath it; and (5) cover it with the Mylar and tympan, then continuing as described in the text.

CORRECTING OR CHANGING LITHOGRAPHIC DRAWINGS BY THE ABRASIVE METHOD ON STONES OR METAL PLATES

by *Lynton R. Kistler*

MAKING CHANGES in a lithographic drawing either on stone or metal has always been a problem in the craft. When solvents and counteretching are used, the character of the surface is changed in such a way that it is difficult, if not impossible, to match the work which has already been done. If solvents are used to remove unwanted work, either to correct a faulty passage or rectify a mishap before the stone or plate is rolled up, the result will be possible damage to acceptable work. A hard edge may also appear around the altered area. When a grease solvent is used, followed by counteretching after roll up, the surface is changed in such a way that it is difficult, if not impossible, to match the previously drawn portions of the work. The problem of the hard edged ring may also be present.

On either metal or stone, the etching process alters the original grain. It is reduced in sharpness, giving a flatter grain for the artist to work upon. The remaining grain feels smooth or greasy to draw upon. The grain does not bite the crayon as it does with a freshly grained stone or plate. The result is a difference in the added work. This is particularly objectionable in either a large or small tonal area.

Regraining the area to be corrected gives the artist a surface to work upon which is just like that of a freshly grained stone or plate. The procedure is as follows: the drawing is etched, rolled up as usual and dusted with french chalk. A second etch is omitted at this time. The printing plate is then counteretched to remove the gum arabic from the entire plate. The area to be changed is then regrained locally with a muller of appropriate size and an abrasive. The entire plate is kept wet during the regraining.

When the image is removed, the plate is dried and is ready to receive the new work or correc-

tion. The area is worked in the regular manner. The plate is then powdered, given its second etch and rolled up in the usual manner.

This method is suitable for repairing small areas on stone and metal plates. It will often save a fine piece of work that cost the artist many hours of labor. It is also a cure for those mishaps which sometimes occur when breath is blown on a stone or plate, leaving saliva which results in a white spot in the work. It can provide a cure for latent dirt which sometimes shows up in a print. The area can be spot grained and reworked to match the rest of the drawing.

If the lithograph is to be reworked over the whole image, this method does not apply. In that case the reopening of the printing plate with counteretch would be the only solution.

There may be a tendency—after local regraining—for some of the old work to come back up, particularly on stone. This can be overcome by careful observation in printing and by etching the corrected areas with a weak solution of nitric, phosphoric and tannic acids. If this occurs on metal plates, a few drops of phosphoric acid in gum may be used.

The tools and materials necessary are few. Glass marbles flattened on one side make excellent mullers. For larger areas small glass paperweights are excellent but are hard to find. While glass is the best muller for this purpose, many hard objects can also be used. In any case, the edges of the muller should be beveled to avoid digging into the printing plate. The grit can be any graining sand, carborundum is a good standard abrasive to use.

***Lynton R. Kistler,
a master-printer
since the 1930s,
lives in
Los Angeles.***

INFORMATION EXCHANGE

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

IN THE MONTHS since TTP was last published, there has been a steady flow of letters from our readers. Three have come from participants in a professional aluminum plate workshop conducted at Tamarind Institute in June, 1978:

Crystalline Patterned Washes

TUSCHE WASHES containing crystalline patterns have a dramatic appeal, but until recently I have not known how to produce them except through freeze-drying. The restrictions of freeze-drying are difficult, sometimes impossible, to overcome. Only plates may be used. Freeze-drying a wash on stone would cause crazing, and since moving a plate without disturbing a wash is difficult at best, the processes of drawing and freezing must all take place out of doors during winter. Clear, cold weather and low humidity are essential.

Lauren K. Attinello has conducted experiments aimed at creation of crystalline patterned washes through use of chemical additives. Associated with the Smithsonian Institution in Washington, Attinello has achieved results which look very promising. With the methods she describes—and some experimentation—it is probable that a personal, crystalline wash, drawing technique could be perfected:

Experimenting with wash techniques on aluminum in search of crystalline pattern formation, I tried various precipitates of sodium, but the results were not acceptable. Finally I used sodium sulfite to break up the wash surface into crystals (While it might also be worthwhile to investigate other washes and solvents and their reaction to the sodium sulfite crystals, I have not had the time.)

Procedure for Crystalline Wash (sodium sulfite solution):

1. Mix a wash with Charbonnel coverflex paste tusche and distilled water.
2. Mix a separate container of sodium sulfite crystals with warm distilled water.

3. On a counteretched aluminum plate execute a tusche wash drawing. Drop sodium sulfite solution into the wash, using a medicine dropper, brush or any other tool. In my experiments the wash was puddled and then diluted with distilled water. The process lacks total control since, while the dispersed tusche is visible, the extent of crystallization is not fully apparent until the wash has dried. Left overnight, crystallization pushes the pigment and grease particles into formation. The process may be speeded through use of a hair dryer.
4. To prevent scratching of the dry wash surface, it is necessary to remove as much as possible of the crystallized sodium sulfite prior to processing. To do this, apply talc heavily, piling it up. Brush the talc around, lightly and carefully, allowing the brush and the talc to loosen the crystals. Fresh talc should be applied, removed, and discarded three times.
5. Apply pure gum arabic and buff it down tightly.
6. Wash out the drawing with lithotine followed by lacquer thinner and finally "C" solvent. Put the image into lacquer base.
7. When the lacquer is dry, apply asphaltum, buffing it out smoothly. Wash off the gum and roll up the image fully.
8. Following a rest period, re-gum the surface, clean out the image a second time, removing the lacquer, then reapply a lacquer base. Proceed to roll up and proofing. This second cleaning and lacquering is done to help bring up the full detail within the wash.

Attinello's test proof is rich with crystalline pattern structures within the wash formations. I believe that had the experiment been executed on stone, the fine interior greys of the washes would have been retained. There is little doubt that the sodium sulfite in solution, while dispersing the tusche and forming patterns by crystallization, is also causing oxidation of the aluminum.

Everyone is familiar with the patterns that can be induced in washes by addition of table salt (sodium chloride). Usually this is done with dry salt rather than with salt in solution. When salt is sprinkled into a nearly dry wash, the remaining damp tusche particles gather around the grains of salt causing dark patterns, with light or white spots within them. This happens because all of the salt has not gone into solution. The small portion that is in solution disperses the tusche, while the remaining undissolved particle attracts it. Salt dropped into a very wet puddle of tusche will go almost completely into solution, with the result that a very different kind of dispersion takes place; although, characteristically, when the plate is

rolled up, little remains of the pattern that has been created. The excess salt in solution has reacted with the aluminum, inducing heavy oxidation which underlies the tusche-grease pattern. Processing removes the oxidation and the grease—never having been established—fails to roll up.

Similarly, in Attinello's procedure, some oxidation is occurring with the sodium sulfite, interfering with the retention of delicate greys. The darker, fuller areas may be damaged as well. Nevertheless, the sodium sulfite crystallization is a useful process on aluminum plates; on stone it would operate with full range of values preserved.

Positive-Working Aluminum Plates

PAUL FELDHAUS, professor of art at California State University, Chico, writes to recommend use of a positive-working, pre-sensitized aluminum plate for hand printing, which, from his experience, has proven versatile and reliable:

In the summer of 1977, while in London, I visited the Curwyn Studio. During my visit the shop foreman demonstrated the preparation of a positive-working plate which has been in use at Curwyn for about three years. The plate is quite popular, in that many kinds of work can be exposed directly to it without an intervening negative. He demonstrated the direct exposure of a drawing on acetate.

The procedures for handling and processing the plate are remarkably simple. As is usual for light sensitive materials, the plate surface should not be exposed to daylight before it is developed. The plate should be prepared under yellow safe-light, although it can be handled in normal light if it is kept covered until exposed in the light table. Drawings may be made on transparent and translucent materials, however exposure times are longer for matte materials than for clear. Rather than use the manufacturer's recommended exposure wedge, my tests were made with strips cut from the plate and were subsequently exposed to my copy material for varying lengths of time.

In developing, a pool of developer may be poured on the plate or it may be immersed; no rubbing is necessary. In about two minutes the image is developed and the plate is cleared of emulsion. It is an anodized plate free of oxidation and the surface has been grained, assisting in water retention. Additions and deletions are made with proprietary materials and scumming while printing is controlled with a two percent solution of sulphuric acid.

In gumming, 14 Baume gum arabic has worked well, although 8 Baume is recommended. The

directions that accompany the plate are for use on an offset press. Although Curwyn uses a flat bed offset, I have used a hand press with good results. I have noted that excess pressure in printing abrades the image. The plate and processing materials are available from the Howsen-Algraph Co., Inc., 480 Meadow Lane, Carstadt, NJ 07072.

Tamarind is currently testing the Howsen-Algraph positive-working plate. An in-depth research report will be published in a future issue of TTP.

Hi-Con Negative Coating

EVERYONE who works with hand coated, negative-working aluminum plates has experienced photo-sensitizing materials which work for a while, then give poor results or fail altogether. It is often difficult to trace the exact cause of problems, since most hand coating procedures are carried out under less than optimum conditions and with little or none of the equipment available in modern offset houses, for which the sensitizing chemicals are made.

Peter Elloian, instructor in printmaking at the School of the Toledo Museum of Art, describes a special, highly concentrated sensitizing material which he considers to be fail-safe under most conditions:

We have been using Western Litho-Plate Hi-Con Negative-Working Sensitizer in place of the standard negative-working coatings and the results have been consistently successful. It is packaged in the familiar two-part system of liquid and powder (for pints or gallons), however the diazo powder supplied is in excess of the usual amount. I have always mixed all the powder into the liquid and have always applied it with the damp-dry half of a sponge—similar to your recommended procedure and the process which followed in demonstration. . . . My plate preparation was not as elaborate as yours, nor have I tried applying a final, light buff to the surface after setting. I have applied it in a darkened room as well as under normal, incandescent lighting conditions; both have been successful. I believe the added amount of diazo powder in the Hi-Con mix, while not overly sensitive to normal light, makes the sensitizer more dependable for hand application.

Polymer Coated Transfer Paper

AN AUGUST 1978 letter from Bela Petheo, professor of art at St. John's University in Collegeville, Minnesota, comments on our article, "Lithographic Transfer Papers" (TTP, Vol. 1,

This column appears regularly in TTP. Letters, comments and suggestions from lithographers, artist-teachers and students are invited.

No. 7, pp. 81-85 +), and offers procedures he has found useful in making and using transfer paper:

Having just returned from abroad, I read your excellent article in TTP. I have admired Tamarind's use of polymer in image transposition and would like to extend that interest to transfer paper coatings as well. A few years ago Leonard Boucour complained to me that the firm has a terrible time getting rid of the tackiness of their dried acrylic paints. I pointed out to him, to his great consternation, that this tackiness was exactly the quality which enabled me to do some successful transfers. I published the information in *Artist's Proof* [Vol. 8, 1968, p. 100] a long while ago. I then learned that there is a specific "tackifying" agent which can be mixed into the polymer to increase that propensity.

During my two years study in Vienna, I admired the way Rubens used as an underpainting light brown, horizontal brushstrokes which are part of the final effect. One can brushcoat the transfer paper to achieve similar effects. Fine carborundum grit in the coating picks up an excess amount of crayon in the drawing. The excess crayon is squashed in the transfer process and a very controlled, sponge-effect can be obtained. Finally, I almost became a "mannerist" in my own style and longed to return to direct work on stone. As a supplementary technique, I will use it again, particularly in my color work. Perhaps after consulting my article in *Artist's Proof*, some of your readers might experiment with it on their own.

Petheo's article, "Polymer Coated Lithographic Paper," describes his procedure for making the paper and his process of transfer. He uses New Master's acrylic-vinyl, co-polymer gloss medium as a coating material which he brushes on the surface of the paper. He coats the paper twice with a textured brushstroke, adding sand or carborundum to overcome what would otherwise be a slick surface. Medium to soft crayon, rubbing crayon and tusche (either in water or solvent solution) can be used as drawing materials. Petheo describes a transfer process much the same as that set forth in the TTP article. In executing the transfer a damp paper is laid over the transfer on the stone. Petheo then adds a dry blotter prior to covering with the Mylar. One run through the press usually completes the transfer, although additional runs may be made if needed.

Petheo adds the precaution that there might be some difficulty in transferring a heavy build-up of crayon and suggests presoftening might be necessary. He further suggests that Liquitex Gel works well as a coating.

Trouble Shooting: Inks and Plates

VISCOSITY, tack, thixotropy and length: four properties of ink understood by few and, in printing, given consideration by even fewer. For a lithographer new to the medium, beginning to handle the complexities of printing, an understanding of the behavior of inks and the modification of ink properties becomes of paramount importance. Cecilia van Rabenau, a lithography student in Deluth, Minnesota, has written to describe printing problems she has encountered, and since problems rarely come alone in lithography, the way in which they are complicated by other variables (I have edited and revised van Radenau's letter for clarity):

I am newly printing in color and am running into problems. I can't seem to find solutions either in print or from people in my area. I hope you will help me with them. First, I am having a great deal of trouble printing black over any color. Is it possible to get a rich black over color? If so, how? I don't mean in solid areas only; even my crayon work does not print black. As an alternative, could I overprint the black with very transparent colors? If so, what is a good transparent base?

I have tried printing the color long before the black and just before the black; I have tried overinking, varying the drying time and moistening the color with lithotine. Excessive pressure has not worked, and designing the image to reduce the overlay of black upon colors changes the quality. Help!

Second, I am having a very strange problem with an aluminum color plate. It has three distinct and separate tonal areas: solid black, a medium rubbed tone and a very light tone (No. 5 pencil). All goes well through the etches and up to the final printing. When I start printing the plate in grey ink the very light tonal area gradually *disappears*. Why is this happening? I am sure it would not happen in black.

I have tried magnesium carbonate and lake-tine. I have also tried rolling only the light area. I have tried everything I can think of and am completely baffled. After about three prints, I lose the crayon tone.

When you begin to use an ink you must consider its components and its properties as it comes from the can. Although similar in color, the inks produced by different ink companies for use in hand lithography have variations in their physical properties (tack, length, etc.); appearance (hue, transparency, intensity, etc.); behavioral characteristics (lightfastness, tendency toward bronzing, etc.); and in the way they print (disintegration, tinting out, traveling, etc.). All of these qualities are important for one reason or another, but of the greatest im-

portance when printing are the physical properties of the ink.

The failure of any ink layer to print well over another can come a variety of single circumstances or many combinations thereof. When an ink layer on paper is too wet (or too heavy), rejection occurs; i.e., the second image does not print well or fully over the first, whether the second printing be crayon, wash or solid. It is hard to describe how rejection looks, but generally the surface will be pinholed, dry and uneven looking; the bloom of the drawing will be absent; and black areas will appear grey because of ink showing through. The print will be generally unpleasant and, by professional standards, unacceptable.

If the first layer of ink is not sufficiently dry it will partially pull off when a new layer of ink is printed over it; if the first layer is too dry it will not have sufficient tooth and absorbency so as to pull ink from the second printing element; both conditions cause rejection. (Van Rabenau's experience in moistening the first printed layer with lithotine demonstrated this. Unsatisfactory as this was, it nevertheless served to return some receptivity—tack or “trapability”—to that layer. But there are better ways of doing this.)

In addition to the problems already described, an ink printed too heavily on the first run of a multi-run print can seal the paper—particularly a hard surfaced paper of low absorbency—and cause rejection of the ink in the second printing.

In the first circumstance, it is a simple matter to allow more time between the first and second printing. Since inks vary so much in behavior, one day between runs may be exactly right for some inks and far too long for others. If, however, the first printing is already too dry, there is little that can be done. Modification of the ink—through addition of varnish to improve tack, as example—will do little to improve the printing quality. While modification may slightly improve the second printing, rejection will still occur, and the printed image will never approach the quality that can be achieved through proper control of drying time.

There are many ink modifiers: materials added to ink to change one, two or more of its physical properties. Among them are varnishes 00 and 3 through 8, magnesium carbonate (“mag”), driers and retarders, as well as some waxy compounds. Ink properties are also changed when inks are mixed together. Varnishes generally reduce the viscosity of an ink and to some degree give it greater tack. Magnesium carbonate does the opposite, increasing viscosity and reducing tack. If an ink

of already low tack is modified with mag, it can be made unprintable.

The drying time of ink surface can be controlled by leaving the prints exposed to air (they dry faster because ink dries through oxidation), stacking them to reduce air circulation, or wrapping them in plastic (preventing oxygen from reaching them). Addition of a retarder to a fast-drying ink can delay its drying time, thus maintaining an acceptable surface for a later run.

Rejection can sometimes be caused by factors other than the properties of an ink. The absorbency of paper (or the lack of it) has already been mentioned. Another cause is improper pressure in printing; either too much or too little pressure can cause rejection to occur. There is an optimum pressure and an optimum ink film for the printing of every image, paper, ink and layer.

Even when the first ink layer is in optimum condition, some modification of the ink may be necessary so that the second image may print with complete fidelity. Certainly this is the case with some black inks. A crayon black directly from the can will in most cases be too stiff and will not have sufficient tack to print well over another color. In this case, addition of a small amount of number 5 or 6 varnish may be the solution. Some black inks, while seeming soft enough, may not have enough tack; a little stiff varnish such as number 7 or 8 may be the answer. Senefelder's Crayon Black 1803 (Graphic Chemical), while an excellent ink for many purposes, is an ink that is often too stiff for overprinting. Such an ink would require modification of the kind I have mentioned.

There are some inks on the market, black and colors alike, that should be used with great caution. Inks that are manufactured with the aim of producing a low-cost product usually have faults in their behavior characteristics, among them bronzing, fading, tinting out (dissolution of color into the water used in sponging), disintegration (causing scumming) and traveling (caused by vehicles that move through the paper upon which the ink is printed). If an ink is new or unknown, draw-down tests should be made before it is used in important work. Hang the draw-downs on the wall and observe their behavior for a few weeks. If there is evidence of problems, avoid their use.

Black ink that is printed over a color, particularly over a transparent color, will always appear blacker and will have more of a sheen than the same black ink printed directly on the paper. Varying degrees of blackness will appear when a black is printed over different color transparencies. Black solids printed directly on

paper usually appear matte. Consideration must also be given to the various colors (hues) of black, for they are not all alike, depending upon many factors in the making of the ink: the kind of pigments used (carbon blacks, mineral blacks, black dyes, etc.) as well as the varnishes and extenders. Each material will impart a characteristic color, as well as seating, tack and drying characteristics. The colors of black inks range from warm brown tones to very cold blues. Artists can sometimes make blacks appear even blacker by adding deep, transparent blues to the black inks to be used.

As a transparent base, Tamarind has long used Hanco Offset Tint Base, W-191-X, made by Handschy Chemical Company. Ordered in one and one quarter pound cans with **no drier added**, it will serve every need. Sinclair and Valentine also makes a very good transparent base, but it requires more modification to prepare it for hand printing.*

*For further discussion of the questions raised in van Rabenau's letter see TBL, section 11.2, pp. 301-03; TTP, Vol. 1, No. 3, p. 30; and TTP Vol. 2, No. 1, pp. 14-15, steps 4 through 6.

By way of further comment, it might be added that an image on aluminum which is being printed from a grease base is open to attack from several sources. Ink is composed of vehicles, pigments and fillers, some which are chemically reactive (see TBL, sections 11.3 through 11.7). When a reactive ink is used on an image that is not in lacquer base, it can attach the grease reservoirs from which it is being printed.

Several other interacting circumstances further complicate the situation. The water used in sponging can be absorbed by the ink; it can then take into solution from the ink itself materials which are chemically harmful to the grease reservoirs. The water, if it comes from the tap, may have a chemical content which can attack the grease reservoirs, either by becoming part of the ink or when sponged over the grease reservoirs between applications of ink. Finally, when an ink with a low tack is modified by the addition of magnesium carbonate, its ability to trap on an image is further reduced. The combined effects of a reduction of ink trapped on the image, of chemical attack within the grease reservoirs, and of mineral attack from the surface water can result in the kind of image-deterioration described by van Rabenau in the final paragraphs of her letter. On aluminum, such deterioration can be surprisingly rapid. The most subtle drawing contains the tiniest grease dots, thus is the least resistant to damage, and succumbs first. Images with a tonal range from delicate to rich will then print with high contrast. Inks with white as a base is usually low in tack and probably has a chemical content which is detrimental to delicate grease reservoirs. Some modification with mag may be possible, although usually unnecessary; too much modification with mag will render ink unprintable, since it will not trap.

Although images on stone are more resistant to chemical attack, deterioration can nonetheless occur. The protection of a lacquer base, prerequisite on aluminum, can often be desirable on stone. When printing any color from a grease base on aluminum, always sponge with distilled water. Use of distilled water may also be recommended when printing delicate drawings from stone.

Conflicting Statements Resolved*

AMONG THE READERS of Information Exchange, only one has written to question two conflicting statements which appeared in separate issues:

TTP, Vol. 1, No. 7, p. 93: Since gum absorbs 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.

TTP, Vol. 2, No. 1, p. 15: . . . and a maximum condensation is what is sought in creating an adsorbed gum film. Gum arabic forms the best adsorbed gum film at its aggregate concentration. That aggregate property of gum arabic is most evident at acidities from pH 4.6 to 6.3 and decreases as acidity increases. The minimum aggregate property of gum arabic is observed at pH 0.7.

In the earlier statement two words are missing which should have been included: "Since gum adsorbs *on aluminum* at its maximum capacity at a pH of 2.8" would have been correct. This then takes into account the particular propensities of aluminum in its reaction to gum arabic and acid.

The statement is meant to indicate that at a pH lower than 2.8 on any printing element does not create a good adsorbed gum film. While the aggregate concentration of gum arabic is between 4.6 and 6.3, some extra amount of acid should be present when it is applied as an etch. This extra acid will react with the stone or metal and the pH will then rise to the normal aggregate range. If no extra acid is present and the gum is already at the aggregate pH at the time of its application to the printing element, the stone or metal will react to the natural acids that are a part of the gum and the pH will be driven above its aggregate range, thereby causing an inadequacy of gum film formation. In the use of pure gum arabic alone as an etch on aluminum, it is demonstrated time after time that within a few impressions the plate is scumming and the edges are breaking down. This is due to an inadequate adsorbed gum film which is neither complete enough nor strong enough to withstand the abrasion of hand printing techniques. The recommended pH strengths (3.0 to 3.2 on stone or aluminum and 3.8 to 4.0 on zinc) are correct and take into account the phenomena described above and the characteristics of the printing elements. (The theoretical basis of my comments is to be found in a thesis by George L. Riddell, *A Study of Certain Aspects of Lithographic Printing*.) □

*I thank Clarence McGrath for his careful reading of TTP and for bringing my error to light.

transfer. The image can be burnished on to a stone using a pencil or a wooden spoon, thus achieving a "personal signature." The result is equally crisp, and the artist can in this way build the image to his or her liking, emphasizing certain areas and constantly checking progress. As the gasoline evaporates quite rapidly it is necessary to replenish the solvent from time to time. Less than usual should be used when making a transfer in this way, so as not to blur what may already have been transferred to the stone.

There is no advantage in use of color copying machines. The cost is high, the technical difficulties are considerable, and the color is pointless, as the transferred image must in any case be rolled up in a single color.

Although limited in some ways—as are all processes—xerographic transfers are an important and practical alternative to photographic

processes in the "collaging" of images. The availability, flexibility and low cost of xerography have made it a useful lithographic tool for the artist: one that can be quickly mastered by novices and experts alike. □

1. See TBL, Chapter 8, pp. 227-253, for a general discussion of transfer methods.
2. The methods described in this article also supersede an earlier brief discussion of xerographic transfer techniques in TTP, Vol. 1, No. 8, p. 116.
3. See TTP, Vol. 1, No. 5, p. 61.
4. For TAPEM formula, see TTP, Vol. 1, No. 8, p. 111.
5. See "Printing from a Lacquer Base," TTP, Vol. 1, No. 3, pp. 30-31.
6. If the stone were to be counteretched using normal methods, i.e., with the image still in ink, the gasoline used in the transfer process would dissolve the ink and the new copy would be completely muddy.
7. Other manufacturers also make such machines, but the Xerox machines are more widely available.

OTHER BOOKS RECEIVED

Health and Safety in Printmaking. Compiled by Cherie Moses, James Purdham, Dwight Bowkay and Roland Hosein.

Published by Occupational Hygiene Branch, Alberta Labour, Oxbridge Place, 9820 106th Street, Edmonton, Alberta TSK 2J6, 1978. 96 pp.

It is difficult sufficiently to praise this invaluable publication. Every student of printmaking should be required to study it; every printmaking workshop should have copies on hand. For far too long printmakers have ignored to their peril the potential health hazards presented by even the most commonly used materials. In recent years, the increasing use of lacquer printing bases and of photographic plate-making processes has introduced into the workshop solvents and chemicals even more toxic than those of the past.

Clear and concise in organization and format, this manual permits the printmaker quickly to identify the specific dangers of each material. A toxicity rating is assigned on a scale from one (relatively harmless) to six (extremely toxic). Also given are its trade name (or names); chemical composition; specific information as to its effects upon the skin, mucous membranes, nervous system, etc.; and precautions which should be taken in its use.

A recent letter from Mr. Purdham, who is Head of the Chemical Hazards and Toxicology Section, reports that "copies of the publication are still available free of charge, but demand has been heavy and stocks are beginning to run low." If a second printing is made, as Purdham

believes it will be, a small charge may be established to cover costs. In any event, the citizens of both the United States and Canada owe the authors and publishers an expression of appreciation for a vital task superbly done.

Words and Images: Universal Limited Art Editions. Introduction by E. Maurice Bloch.

Published by the UCLA Art Council, Los Angeles, 1978. 98 pp. Paper, \$12.80 plus \$1.50 postage.

Published to accompany a comprehensive exhibition of the many superb *livres d'artiste* published by ULAE since 1959, this handsomely produced catalogue contains a brief but informative text by Dr. E. Maurice Bloch, director of The Grunwald Center for the Graphic Arts at UCLA, illustrations of selected lithographs and etchings from the *livres d'artiste*, and photographs of the artists and writers who collaborated in the making of the *livres*. The exhibition and its catalogue stand as a tribute to Tatyana Grosman, from its beginning the moving spirit of ULAE. "The special editions of books and portfolios produced by the workshop," Dr. Bloch concludes, "represent for Mrs. Grosman the single aspect of her creative activity she cherishes most and which she believes is her personal legacy to the history of the *livre d'artiste*. That she discovered in our country the ways and means of accomplishing such a major achievement should dispel any lingering doubts Americans may have of their potential at home."

DIRECTORY OF SUPPLIERS

Listings in TTP's Directory of Suppliers are available to all manufacturers and distributors of materials and services appropriate to use in professional lithography workshops. Information regarding listings will be sent upon request.

Andrews/Nelson/Whitehead. 31-10 48th Avenue, L.I.C., NY 11101. (212) 937-7100. New Rives BFK in 280 gram weight (buffered), white and soft cream. Handmade and mouldmade printmaking papers in colors. Rolls. Large sizes. Custom watermarks. Acid-free mat boards and litho stones.

Charles Brand Machinery, Inc. 84 East 10th St., NYC 10003. (212) 473-3661. Manufacturers of custom built litho presses, etching presses, polyurethane rollers for inking, electric hot plates, levigators and scraper bars. Sold worldwide. Presses of unbreakable construction and highest precision.

Crestwood Paper Co. 315 Hudson St., NYC 10013. (212) 989-2700. Handmade & mouldmade printmaking papers. Somerseset printmaking paper: mouldmade, 100% rag, neutral pH. Avail. white & cream, textured & satin finishes in 250 gr. & 300 gr. in asstd. sizes. Manufactured in England.

Evermon's Lithograph Stones. 249 Duns-muir St., Vancouver, BC, Canada V6B 1X2. (604) 224-7230. The alternative lithograph stone at an alternative price. 30 x 40 x 3" Grade A, \$495; Grade B, \$275. 24 x 36 x 3" Grade A, \$300; Grade B, \$200.

Galaxy Industries, Inc. 27 Proctor Hill Rd., Hollis, NH 03049. (603) 465-2400. Durethane hand rollers, electro-hydraulic etching presses, Evermon air powered levigators, Plasti-Seal shrink packager systems, roll racks, plastic mailing tubes, publishers of *Graphics* magazine of Original and Fine Art Prints.

Glenn Roller Co. Dept. H, 2616 Stingle Ave., Rosemead, CA 91770. (213) 283-2838. Lightweight hand rollers for printmaking, durometers from 20 to 75, all sizes available, chrome handles. Very high quality. A must for the professional.

Goes Lithographing Co. 42 W. 61st St., Chicago, IL 60621. (312) 684-6700. Ball-grained aluminum & zinc plates to your specs. Rental of hand-powered and power cylinder presses, stone or plate. Telephone Chris Goes for quotations.

Govin's Inc. P.O. Box 2271, Tampa, FL 33601. (813) 229-7971. Long reach embossers (chops). Rubber wet stamps. Special designs our specialty. Artists' and printers' seals.

Graphic Chemical & Ink Co. 728 N. Yale Ave., Box 27T, Villa Park, IL 60181. (312) 832-6004. Complete line of supplies for the lithographer. Rollers, all kinds & made to order. Levigators, grits, stones, tools & papers. We manufacture our own specially formulated black and colored inks.

Handschy Industries, Inc. 528 North Fulton, Indianapolis, IN 46202. (317) 636-5565. Manufacturer Hanco printing inks and lithographic supplies, including gum arabic, cellulose gum, etc.

Imago Handmade Paper Mill. 1333 Wood St., Oakland, CA 94607 (415) 465-4744. Custom handmade rag papers for printmakers, book printers and painters. Sample books of our custom stock papers are \$2 (swatch book) and \$10 (working sample book). Custom orders on request.

William Korn, Inc. 111 8th Avenue, NYC 10011. (212) 242-3317. Manufacturers of lithographic crayons, crayon tablets, crayon pencils, rubbing ink, autographic ink, asphaltum-etchground, transfer ink, music plate transfer ink; tusche in liquid, stick & solid form (1 lb. can).

Light Impressions Corp. 131 Gould St., Rochester, NY 14610. (716) 271-8960. Exclusive distributors of Kwik Print light sensitive color imaging materials. Complete line of archival framing products & materials. Free catalogue on request.

Printmakers Machine Co. 724 N. Yale Ave., Box 71T, Villa Park, IL 60181. (312) 832-4888. Sale of printmaking presses only. Sole manufacturer of Dickerson, Sturges & Printmakers litho presses. Quality presses, manufactured by skilled workmen, sold worldwide.

Rembrandt Graphic Arts. The Cane Farm, Rosemont, NJ 08556. (609) 397-0068. Etching and litho presses, yellow & grey litho stones, Hanco inks, Western Litho

plates, KU rollers, printmaking paper, chemicals, solvents, tools. Relief, etching, litho & silkscreen supplies.

Daniel Smith Ink Co. 6500 32 NW, Seattle, WA 98117. (206) 783-8263. Complete needs for the professional lithographer including Hanco, Graphic Chemical and Dan Smith inks and supplies. Aluminum lithographic plates and artist papers at discounts. Distributor for Twinrocker papers.

The Structural Slate Co. 222 E. Main St., Pen Argyl, PA 18072. (215) 863-4141. "Pyramid" brand Pennsylvania slate stone: backing slate, slate plate supports.

Takach-Garfield Press Co., Inc. 3207 Morningside Dr., NE, Albuquerque, NM 87110. (505) 881-8670. Hand or electric operated lithograph presses. Hand operated etching presses. Inking rollers, hand levigators, automatic tympan and punch registration systems, polyethylene scraper bars and straps.

Twinrocker Handmade Paper, Inc. Brookston, IN 74923. (317) 563-3210. Custom handmade papers in any color, size up to 35 x 48". Watermarks, shapes, inner deckles, laminations, sizing. Visiting artists program. Custom paper pulp, cotton fiber, Howard Clark Hollander beater, hydraulic press.

Wepplo Press Co., Inc. 8412 Haeg Dr., Bloomington, MN 55431. (612) 881-0982. Manual or electric etching and lithography presses (including our electric hydraulic litho press). Complete line of accessories includes scraper bars, color rollers, levigators, hot plates, sinks, and acid bath. Brochure available.

Western Litho Plate. 3433 Tree Court Industrial Blvd., St. Louis, MO 63122. (314) 225-5031. Manufacturers of lithographic plates, chemistry and plate processing machinery. Many types of lithographic printing plates, both positive and negative working. Also lithographic chemicals, including finishers.