Haloid Camera xerography

Ronald Ruhl Talbott

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HALOID CAMERA XEROGRAPHY

But in the meantime
Before you cross the street
Take my hand
Life is what happens to you
While you're busy
Making other plans
--John Lennon

A Thesis Report
for the Master of Fine Arts Degree in Photography
Rochester Institute of Technology
School of Photographic Arts & Sciences

Ronald Ruhl Talbott
May, 1982

Frederick Hartt (co-chairman) SEE ADJOINING PAGE
Eugene David Markowski (co-chairman) SEE ADJOINING PAGE
Charles A. Arnold, Jr. Charles A. Arnold Jr. 6/9/82
Russell Kraus
DEDICATION

I wish to thank George Carr and Xerox Corporation for their October 2, 1981 grant of xerographic equipment and future support.

I also want to gratefully acknowledge Andrew Davidhazy of Rochester Institute of Technology for his generous loan of equipment.

This thesis is dedicated to board members and dear friends Charlie Arnold, Fred Hartt, Russell Kraus, Gene Markowski; and advisors Jerry Uelsmann and David Vestal.
PREFACE

There are moments in our lives, there are moments in a day, when we seem to see beyond the usual. Such are the moments of our greatest happiness. Such are the moments of our greatest wisdom. If one could but recall his vision by some sort of sign. It was in this hope that the arts were invented. Sign-posts on the way to what may be. Sign-posts toward greater knowledge.  

--Robert Henri,  
The Art Spirit
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THESIS BOARD

Frederick Hartt is Paul Goodloe McIntire Professor of the History of Art, University of Virginia. His forthcoming Art and Music (provisional title) includes photography.
(co-chairman)

Eugene D. Markowski is Associate Professor of Art, University of Virginia. He is currently writing a major book for Prentice-Hall on the aesthetics of photography and interrelation to other art media.
(co-chairman)

Charles A. Arnold, Jr. is Professor and Staff Chairman, Photographic Illustration, Rochester Institute of Technology. He is a pioneer in the exploration of xerography as a medium of artistic expression.

Russell Kraus is Director, School of Photographic Arts & Sciences, Rochester Institute of Technology. His background includes administration, visual and performing arts, and professional counseling.
THESIS ADVISORS

David Vestal is Contributing Editor, Popular Photography and author of the *Craft of Photography*.

Jerry N. Uelsmann is Graduate Research Professor, University of Florida. His latest book is *Jerry N. Uelsmann, Silver Meditations*.
PURPOSE

The purpose of the thesis is the investigation of Haloid Xerography as a vehicle of energetic, though not self-conscious expression.
PROCEDURES AND IMPLEMENTATION

The thesis will consist of:

1. A thesis exhibition reflecting significant growth perspective historically in content and process.
3. Submission of a personally meaningful and externally useful written report.
In 1938 a brilliant and persistent patent attorney named Chester F. Carlson successfully made the first xerographic image. Frustrated at the difficulty of making multiple copies in an office environment, Carlson employed the basic principles of static electricity that ushered in a world-wide copier industry. A small photo paper manufacturer in Rochester, New York eventually saw the potential in Carlson's discovery, invested their assets in xerography, and grew from the infant Haloid Company to the monumental Xerox Corporation known today.

By 1959 copies were available at the simple touch of a button, and the sixties saw the proliferation of types of copiers and numbers of suppliers. Several color copiers even reached the marketplace.

Predictably, artists began to discover this most democratic new medium, often unaware of what others were exploring around them.

The Spring quarter of 1979 was particularly frustrating for me in light of my inability to find
a mode of expression I felt was uniquely indicative of myself. I was very skilled at responding to professor's assignments, but felt strongly that my content had yet to engage a compelling technique. It was at this time in a core workshop of Charles A. Arnold, Jr. that I first experimented with Haloid Xerography.

There certainly are a number of kinds of art based loosely on the office copier. Most of these machines require the subject to be compressed in two dimensions on the platen. The Haloid Model 4 View Camera was an early commercially-available imaging system for xerography. It became obsolete and was consigned almost immediately to the back rooms and dirty basements of business establishments and small printing companies.

I have always had little patience with alternative photographic processes as technique alone. The most important aspect for me with Haloid is that I recognized that my content was enhanced, enlarged, and energized. Man Ray said that there are always those who look at process and ask how it is done, while others ask why. "Personally I have always preferred inspiration to information."
WHY I WORK THE WAY I DO

The beauty of this unique xerographic camera is that you can work with more refined and delicate textural and tonal possibilities; you can enlarge or reduce; and very importantly, the Model 4 may be used as any view-type camera to photograph in three-dimensional real space.

Here are other reasons I think appropriate in consideration of why I work the way I do:

1. The way some artists work with this process enables them considerable control. Each of their images will be slightly different, but substantially similar. The way I work encourages and employs spontaneity. Though I exercise control as needed, some of the best work utilizes the remarkable, unpredictable, temperamental qualities of this medium. Many images are one of a kind. I like this odd relationship between control and spontaneity, the Mondrian balance of discipline and freedom. I see elements of intense control, as well as automatism, as in the spontaneous poetry of Hans Arp. Like Uelmann, I am willing
"to revisualize the final image at any point in the entire process."

2. Xerographic equipment is dependent on electricity; exposures are long. Many artists confine themselves to real space, physically bringing their subject before the camera in the studio. This approach can limit the options, I think, so I choose to generation from silver prints, drawings, other types of xerographic material, and collage arrangements. Sometimes I work directly in real space as well.

3. I can layer image on top of image on top of image.

4. I can take the xerograph any number of generations from the original source, controlling detail, contrast, density, tonality, and perceived content.

5. I like the immediacy of the process. It may take me a few minutes to achieve an image that pleases me; more often it is a few days or weeks. But I still have feedback in minutes on everything I try. During the months preceding the thesis exhibition, I worked every day making xerographs and generally stayed up working all night long every other night. So this immediacy can be addictive.
6. At the time the image is transferred from the plate to the paper or other receiving medium, the toner has not been fused in place. It can therefore be manipulated in a variety of ways by the artist's hand before it is made permanent. It can be blown, brushed about, drawn upon, etc.

7. I like the textural quality of the toner on and in the paper. It is possible to control to some extent the depth to which the toner fuses with the receiving medium.

8. The process is apparently archival. It will last as long as the receiving material or medium to which it is transferred.

9. I can select any type of receiving medium, thus providing color and textural choices. Some images might call for a delicate, translucent rice paper; some might require a heavy printmaker's stock; and other images need to be transferred to a metal plate.
AESTHETIC JUSTIFICATION

In college I found a quotation attributed to D. H. Lawrence, tore it out of the paper, and carried it in my wallet for years. It said something to the effect that work should catch you up like an interesting game. If it isn't fun, don't do it.

Clearly artistic growth involves the same dedication, even mania, as any profession. Picasso created in a five year period five thousand spectacular graphic pieces, completed at the age of eighty two.\(^5\) Yes, suddenly for me, it was as for the seven year old Jacque Henri Lartigue, writing in his diary after his father had given him his first camera: "Photography is a magic thing!"\(^6\) And I was absorbed. It was learning the art of unlearning.

Frederick Hartt characterized my work as a psychological well. The deeper and more spontaneously I seem to dip, the stronger the resulting imagery. Edward Weston, writing in his Mexico Daybooks said that "love like art returns in measure the emotion one carries to it; one finds what one seeks."\(^7\)
Yet even so Weston cut from his Daybooks almost all references to intense personal agonies suffered. His passion consumed in him what was unnecessary, so he might "present his feeling for life...without subterfuge or evasion in spirit or technique." And like Weston, I strive not to meet this particular test of Emerson: "What you are speaks so loudly, I can't hear what you say." The challenge is to portray experience, but without self-conscious expression.

David Vestal:

Expression is the point. The Expression Equation. There's this to say about expression: We are all alike, so we can understand each other. The sameness makes communication possible, and the difference makes it worthwhile.

Man Ray wrote in The Age of Light (1934) that he presents autobiographical imagery as experience, not experiment. Using chemicals and light, no plastic expression can be more than a residue, even though seized at moments of emotional contact. A simple identification on the part of the viewer and related to his unique experience precludes arbitrary classification. Efforts born of desire must have subconscious energy to aid in their realization. The artist must be willing
to have contempt for process and liberated to automatism
to maximize intensity of message. "Open expressions
are made daily, and it remains for the eye to train
itself to see without prejudice or restraint."\textsuperscript{11}

Authentic personal discovery is goal and
objective of Zen. Expression is an artist's internal
search, its significance related to the individual
viewer. Stiglitz and White knew photographs can have
multiple meanings. John Szarkowski thinks most
artists, like Jerry Uelsmann (and myself), believe that
symbolic meanings will manifest with or without the
artist's personal concern.\textsuperscript{12}Probably only the in-
expressible in life is worth expressing. Words are
by-products that can help; words can also lead astray.\textsuperscript{13}
CRITICAL ANALYSES

The reviews that follow yield more insight than I could hope to provide myself into the process and content of the thesis material.

James S. LaVilla-Havelin is a poet, critic, and museum educator:

In Ron Talbott's work ambiguous spaces, calligraphic images, gestures as fleeting and as sure as frames in a film, characters, and moments crowd and crow, send mixed messages, energize his surfaces, provide alternate readings, tell private stories. Talbott's range of imagery and approach is impressive, and the relationship between the technique and the meaning - never merely showy - is organic, intimate. Talbott's theatre is without theatricality which calls attention to itself, without forgetting its paper and surface and scratch two-dimensionality. And as line becomes letter becomes horizon becomes line once again, Talbott approaches the borders between presence and ethereality, a frontier which Man Ray and Calder and D. H. Lawrence lived on. His work speaks its process, its becoming, its directions and conversations.14

Ron Talbott who has made exclusive use of the Haloid process over a number of years, has produced a great variety of images from silver prints, his own drawings, and other Xerographs, each displaying the immediacy of the medium, and the spontaneous poetry of the artist. His striking blend of control and automatism within the process reveals a personality imposing its will so that process and artist fuse, an event of one thing making itself parallel to the other, of symmetrical co-existence. His Xerographic prints, Self Portrait 1979, and Nancy 1979 are derived from silver prints photographed with the Haloid Camera. Toner for the Self Portrait was transferred with a negative electrostatic charge which reversed the shadows, and highlights, and produced a soft flow of grey tones which form the head. Nancy was photographed at a slow shutter speed resulting in a blurred image, and a severely scratched Xerographic plate was intentionally used to enhance the sense of movement. The velvety quality of the rich black and tranquil grey printed on slightly textured paper gives a feeling of fresh immediacy, as though the photographer had produced the images before our eyes with soft vine charcoal. Talbott's images depict human qualities perceived by experience, where individual characteristics are integrated and transformed into the intended image. The photographer's intuition, perceptions and thought brings together a spatial structure from a non-linear succession of form-relationships and ideas. These ideas are not isolated by their free distribution in space, but interact symmetrically in sequence within a intentionally contemplative image. His images cut one-dimensional paths through our minds intellectually, but transform themselves into the fourth dimension by our subconscious cognition, where reality and fantasy co-exist hidden from outer reality. The sequence of concepts intuitively grasped, and intellectually arranged within the fervently controlled medium indicates a different sort of photographic synthesis, that serves as a bridge
between the observed and the observer, recognized from image to image, and in each image. Perhaps Talbott's images have effectively incorporated actions in time, successions in time, where the mind integrates the pieces presented, and reconstructs internal images partly made up of Talbott's poetry, and partly the perceiver's. These images are not literary fact, but they do suggest a nexus between word and image made possible through associated experience. Self Portrait and Nancy are seamless images, isomorphic in technical form, where non-isomorphic unconventional content is presented through conventional forms which are executed by unusual technical means. The technical means become the crucible for his ideas and thoughts which are hung with previous associations beyond that which is seen in the images. The images have a potential held within their two dimensionality for interaction with the observer that may reach into other dimensions through associative experience. But that potential cannot be realized unless each element within the image is visually and intellectually revised by the next, which can bring the observer closer to the photographer's meaning. Through a revisionist compilation, one may reach beyond the superficial, so that the image may be conceived as a totality. The intended meaning, and the totality of the image merge, to animate observer-participation beyond formality. These images do not rest on academic formalities, but instead are the wholeness of experience where creativity, imagination, personal transformation, subtle sensibilities, and the most basic patterns of reality common to humankind merge to form individualistic expression.

Held within these images, indeed all of the photographer's work is a consideration of time, a vision of evolution, in which everything is changing. Coupled with this, we find in these fluid structures a constant time transformation effecting the paradigms of consciousness we take for granted. Suggested in the time transformation
from past to present is a shift into a process-oriented consciousness, which is based on abstract disciplines. Yet there is an uneasy struggle for artistic individual freedom and the ever-present social operatives seen through the higher goals floating on abstract disciplines. that bring these images into humanistic sensibilities.

The occurrence of events in time are gathered into a single perception, reflected in what appears to be a reflexive universe of thought. For Talbott, the basic measure of time is experience, strongly stated in each image, but this measure principle takes overlapping experiences on a level of organic measure rather than mathematical, in which the geometry of meaning is revealed.

As a natural expression of activity and experience, measuring time, these images are symbols which may be read in dynamic stages, each stage providing, and conferring upon the whole the coloration of transformation. It is as if cycles and transitions are condensed, telescoped into an instant in which we recognize all of existence. Beginning, middle, and ending are all as one, there is no chronological unfolding, there is an explicit implicit in each image where we find our own internal organic connections united with a lucid external environment of geometrical order.

As notations in time, Talbott's images speak of internal notations as well, notations that over-ride the specifics of limited time as we know and experience it. These personal internal notations made physically visible by the specific technical process, allows for observer interaction, yielding a cognition of personal life experience. Synthesizing reaction and action, into a single image, we may follow Talbott's technical improvisations as they form deeply felt and carefully executed sensibilities as a human, as an artist. In subtle ways his conscious and unconscious reveal deep levels of human experience willingly shared through his photographs. For those of us willing to take the time to look into these images, will find an ensemble of characteristics common to all humanity. Characteristics when recognized, enriching life through all time sequences.
SELF PORTRAIT 1979
CONCLUDING OBSERVATIONS

The thesis experience:

1. provided months of intense, all-consuming involvement at a time when my life needed just such a prescription. This was not art as therapy, but not unrelated either.

2. renewed and strengthened aesthetic self-confidence. Indeed, reinforced my belief in the incomprehensible depth of human abilities of expression.

3. reinforced that a person and his art are a sum total of all experiences. Beyond that, the artist is the totality of all missed opportunities and is therefore a composite of these as well.

4. encourages me to continue explorations of photography's interrelationship with other art media.

5. makes me humbly aware of just how much more and better I might learn to express the inexpressible.

6. will constantly remind me that only by doing something does it get done, and that thoughts and ideas however great must have counterparts in action.
AFTERWARD

And yet, I know artists whose medium is Life itself, and who express the inexpressible without brush, pencil, chisel, or guitar. They neither paint nor dance. Their medium is Being. Whatever their hand touches has increased Life. They SEE and don't have to draw. They are the artists of being alive.16

--Frederick Franck
AFTERNOTES

1 John Lennon, "Beautiful Boy (Darling Boy)," Double Fantasy, 1980, album slipcase.


8 Ibid, XIV.


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- The Plate Image.
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XEROGRAPHY
What is Xerography...
A Xerographic Plate

... with its protective shield being inserted into the plateholder, so that it covers the plate snugly. The surface is coated with an extremely thin photoconductive layer which, at all times, be kept clean. Scratches, finger marks, dust, dirt, smudges, etc., will cause poor reproductions. The Plate is the Heart of XEROGRAPHY—Take Very Good Care of It.

The XEROGRAPHIC PROCESS:

1. CHARGING THE PLATE
2. EXPOSING THE PLATE
3. TRANSFERRING PLATE IMAGE
4. DEVELOPING THE PLATE
5. FIG. A
6. FIG. B

PLATE BECOMES ELECTRICALLY CHARGED AND IS EXPOSED TO THE IMAGE OF THE ORIGINAL COPY.
The paper has been pre-coated on the side facing the developer and has been fed through the machine in the following manner:

1. **Paper Charging and the Plate Image**
   - The paper is placed in the plate holder, and the plate is inserted into the machine. The plate is then charged with a positive charge, and the image is formed on the plate.

2. **Development of the Plate Image**
   - The plate is then developed with a developer solution to create a latent image on the plate.
   - The developed image is then fixed and washed to remove the unexposed developer.

3. **Image Transfer and Fixing**
   - The developed image is then transferred to the paper using a heat transfer process.
   - The image is then fixed and washed to remove any remaining developer.

Copying Process Summarized...

1. **Paper Charging**
   - The paper is charged with a positive charge using a corona charger.

2. **Plate Image**
   - The plate image is formed on the plate and transferred to the paper using heat and pressure.

3. **Image Transfer**
   - The developed image is transferred to the paper using heat and pressure.

4. **Fixing**
   - The image is fixed and washed to remove any remaining developer.

5. **Output**
   - The output is then ready for use.
The Heat Fuser

The model 4 Camera

The Vapor Fuser

The Processor
NOTE: If the fuse blows, make sure the new fuse is of the correct type and size before replacing it.

FUSE: An alternative fuse (A.C.) fuse can be used to operate the equipment, make certain that the fuse is the correct type and size before replacing it.

OPERATING INSTRUCTIONS

INVERTER: When direct current (D.C.) is being

NOTE: If the fuse blows, make sure the new fuse is of the correct type and size before replacing it.

FUSE: An alternative fuse (A.C.) fuse can be used to operate the equipment, make certain that the fuse is the correct type and size before replacing it.

INVERTER: When direct current (D.C.) is being
1. Place copy to be reproduced face down.
2. After centering, place finger tips on right half of copy. Crisp cover firmly with other half of copy.
3. Pull out bottom plate from the plate disks.
4. Push light goes out. The plate is now ready.
5. Insert rear edge of the plateholder into plateholder face up in charging chamber.
6. Push the corner of the plateholder with the charged surface to remove plate from charging chamber. Hold plate level and push squarely in chamber.
7. Inspect plate (do not touch coated surface). Inspect back in top section of Processor. Parallel located in top section of Processor.

Follow the simple steps shown on this and succeeding pages.

To obtain the best results in making xerograms.

THE PLATE IMAGE
After carefully, and be sure that it is clean.
After removing the lens panel. Handle the
slide through a door in the side panel. Slip
the normal exposure time. The lens is access-
and increase exposure to point these three
print copys, use a yellow after the lens
page exposures from the back of

Camera plate chamber.
Replace shield and remove plate from the
automatically return to its original position.
exposure is completed. The pointer will then
start swinging to zero. When it reaches zero,
button momentarily. The inner pointer will
real number of seconds, press timer switch.
After setting the inner pointer to the cor-

19 and 20.

Exposing information also appears on pages
the exposure chart on page 19. Other helpful
the number of seconds indicated in the
seconds from zero to 60 and the pointer must
on the left side panel. The number of
the exposure that the remaining on the TL
In an automatic, there controls the amount of

Exposing INFORMATION—An image of the
DEVELOPING THE PLATE IMAGE
12. Slowly turn the tray toward an upside-

corner. This provides a safety support to
prevent tray from falling away. From op-
position, this causes the developing
plate to move the shield with the other hand to

11. When pushing down on front of tray to

installing another card, slide the clips over the placeholder, locking

10. Take tray off the developing tray by

9. Hold the bottom of one of the front car-

8. Do not hold place while

7. When placing card, align it securely in place.

6. Withdrawing shield.
Developing Tray:

1. Place tray on developer tray, front first—update and out of the plane—front and first—update and out of the plane

2. Begin developing

3. If the developer action is too slow, the developer will tend to build up at the ends of the plane. This will cause the area to be underexposed. Therefore, try to adjust the speed of the plane and the developer for better results.

4. If the developer action is too fast, it will result in an uneven finished copy.

5. Any developer particles left adhering to the finished copy should be removed using the proper developer cleaning solution.
NOTE: Illustration 17 shows paper guide post.-

the guide onto the plate.

the guide onto the frame while lowering the lower edge of the frame on the plate surface. Hold the rear edge of the frame light against the near corner of the plate. To ease the two into position insert the rear corner of the plate, move up just enough into the frame slot (about one inch) so that it will stay in place.

18. Insert the developed paper into the processor, slide the developer tray back into the processor.

19. Hold the guide and insert to position, the edge is used when matching an 8½” x 11” copy. The opposite end for matching an 8½” x 11” copy. The opposite end.

16. Hold the developed plate in one hand and intermediate, or a paper offset master.

17. Use the paper guide and insert to position the guide onto the plate.

18. Insert the developed paper into the processor, slide the developer tray back into the processor.

19. Hold the guide and insert to position, the edge is used when matching an 8½” x 11” copy. The opposite end.

20. Register a paper master by placing one end of the transparency into the same way.

immediate, or a paper offset master.

directly onto a sheet or sheets of plain paper, a translucent The developed powder image is electrostatically transferred.

IMAGE TRANSFER
NOTICE!...Mailing 1 to 8 copies from a single xerographic image

23-A Positive Charge on the Way in.

23-B Negative Charge on the Way out.

Multiplying...Making 1 to 8 copies from a single xerographic image

3. Remove paper as in steps 22. Notice that the transfer paper and...the copy paper are not used. If the paper guide is not used, slide a small piece of paper under one corner of the image to smooth it. If the paper guide is used, slide a small piece of paper under one corner of the paper guide, and a half of a sheet at a time. This will cause the image to smudge. If the paper guide is not used, slide a small piece of paper under one corner of the paper guide, and a half of a sheet at a time. This will cause the image to smudge.

Special Instructions:

1. Turn the transfer lever switch to the position indicated by the illustration.
2. Next, turn the transfer lever switch to the + (positive) position, then push the paper into the device. Then turn the transfer lever switch to the + (positive) position, then push the paper into the device. This will cause the image to smudge. If the paper guide is not used, slide a small piece of paper under one corner of the image to smooth it. If the paper guide is used, slide a small piece of paper under one corner of the paper guide, and a half of a sheet at a time. This will cause the image to smudge.

3. Remove paper as in steps 22. Notice that the transfer paper and...the copy paper are not used. If the paper guide is not used, slide a small piece of paper under one corner of the image to smooth it. If the paper guide is used, slide a small piece of paper under one corner of the paper guide, and a half of a sheet at a time. This will cause the image to smudge.

4. Use care to avoid shifting or splitting of paper. If the paper guide is used, slide a small piece of paper under one corner of the paper guide, and a half of a sheet at a time. This will cause the image to smudge.

5. Repeat steps 1, 2, and 4 (above) for additional copies.
See next page (7) for plate-drawing instructions.

The transferred and another image produced upon it
are transferred and another image produced upon it.
are transferred and another image produced upon it.

NOTE: This completes the procedure for making

Vapor Fusing

See Fusing Chart on page 20), pull the image
been baked for the proper number of seconds
been baked for the proper number of seconds
been baked for the proper number of seconds

Heat Fusing

Fusing

The powder image is made permanent
Plate Cleaning After Each Use

When the image has been transferred, plate cleaning can be used again. Before they can be used again, Xerographic plates must be cleaned after each use.

Plate Cleaning

Plate Cleaning After Each Use—

After prolonged use—

Wash off the surface of a plate with water and then dry it with a clean cloth. After cleaning, the plate can be stored in a dry place.

Maintaining the Equipment: Page 22

Cleaning Down Equipment

1. Shut off the power to the equipment after each use.
2. Turn off the lights and close the shutter on the equipment.
3. Store the plate in a dry place when not in use.
4. Turn off the power to the equipment when cleaning.
5. Clean the plate using a dry cloth or a soft brush.
6. Return the plate to the equipment when cleaning.
7. Keep the equipment clean to prevent dirt and dust from accumulating.
8. Use a clean cloth to clean the equipment.
9. Store the equipment in a dry place when not in use.
10. Turn off the power to the equipment when cleaning.
The Tone Tray

What it is for and how to use it.
from the process tray.

Firstly, both of the electrodes are removed easily at the same time with the electrochemical process. New developer is most effective to reduce lightness. To increase lightness, developers can be used at different temperatures. The developer can be stored in a refrigerator. The developer can be stored at different temperatures, depending on the type of tray. The developer can be stored at 4°C, 0°C, 0°C, and 0°C.

The temperature of the electrodes should be kept between 10°C and 30°C.

3A. Successful use of Tone Tray depends best-

**Electrode Plate**

**Tone Tray Development**

**Removing and Replacing**

**Plate Cleaning**

Page Cleaning, Page 14

Follow plate cleaning procedure outlined under—

**Plate Cleaning**

Remove contamination of tone in the developer. Without removing in order to reduce the tone-

To correct this condition, make several copies borders with equal centers. Hollow characters are elected at solid areas that to no-name areas of the copy that should be to products of background (over-all English easy)

depress the assembly from the process (Figure 3). To remove the electrodes, Electrode Plate Assembly and Figure 3A Removal and Replacement of Tone Tray

car must be exercised at all times in handling.

**Overprinting**

If overprinting has been excessive, the
Operating Procedure

Camera No. 4
### Table 1: No. 1 Camera Exposure Chart (Lens opening f/16)

<table>
<thead>
<tr>
<th>Type of Original</th>
<th>Exposure Time (in sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>0.5</td>
</tr>
<tr>
<td>50%</td>
<td>1.0</td>
</tr>
<tr>
<td>25%</td>
<td>2.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 'A', Paper</th>
<th>100%</th>
<th>50%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-16</td>
<td>2.0</td>
<td>4.0</td>
<td>8.0</td>
</tr>
<tr>
<td>10-15</td>
<td>4.0</td>
<td>8.0</td>
<td>16.0</td>
</tr>
<tr>
<td>5-10</td>
<td>8.0</td>
<td>16.0</td>
<td>32.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 'B', Paper</th>
<th>100%</th>
<th>50%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-15</td>
<td>1.0</td>
<td>2.0</td>
<td>4.0</td>
</tr>
<tr>
<td>5-10</td>
<td>2.0</td>
<td>4.0</td>
<td>8.0</td>
</tr>
<tr>
<td>2.5-5</td>
<td>4.0</td>
<td>8.0</td>
<td>16.0</td>
</tr>
</tbody>
</table>

### Table 2: No. 4 Camera Exposure Chart (Lens opening f/16)

<table>
<thead>
<tr>
<th>Type of Original</th>
<th>Exposure Time (in sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>0.5</td>
</tr>
<tr>
<td>50%</td>
<td>1.0</td>
</tr>
<tr>
<td>25%</td>
<td>2.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 'A', Paper</th>
<th>100%</th>
<th>50%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-16</td>
<td>2.0</td>
<td>4.0</td>
<td>8.0</td>
</tr>
<tr>
<td>10-15</td>
<td>4.0</td>
<td>8.0</td>
<td>16.0</td>
</tr>
<tr>
<td>5-10</td>
<td>8.0</td>
<td>16.0</td>
<td>32.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 'B', Paper</th>
<th>100%</th>
<th>50%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-15</td>
<td>1.0</td>
<td>2.0</td>
<td>4.0</td>
</tr>
<tr>
<td>5-10</td>
<td>2.0</td>
<td>4.0</td>
<td>8.0</td>
</tr>
<tr>
<td>2.5-5</td>
<td>4.0</td>
<td>8.0</td>
<td>16.0</td>
</tr>
</tbody>
</table>

### Note

- Use the exposure chart on the No. 4 camera to ensure correct exposure.
- Adjust the exposure according to the type of paper and original:
  - Type 'A': Colored paper (color shades)
  - Type 'B': Plain paper

### Operating Information

Timing the exposure: Is the difference of the contrast of the material to be copied high between the light and dark areas of the original? Then, the contrast can be improved by adjusting the exposure accordingly.
### Table 3: Exposure Recommendations

<table>
<thead>
<tr>
<th>Filter Information</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normal exposure</td>
</tr>
<tr>
<td></td>
<td>Increase exposure slightly</td>
</tr>
</tbody>
</table>

### Table 5: Vapour Fusible Time Chart

<table>
<thead>
<tr>
<th>Copy Material</th>
<th>Fusible Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-5 sec.</td>
<td>8-15 sec.</td>
</tr>
<tr>
<td>3-5 sec.</td>
<td>5-10 sec.</td>
</tr>
</tbody>
</table>

### Table 4: Heat Fusible Time Chart

<table>
<thead>
<tr>
<th>Paper Color</th>
<th>Image Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Purple</td>
</tr>
<tr>
<td>Purple</td>
<td>White</td>
</tr>
<tr>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>White</td>
<td>Blue (lighter shades)</td>
</tr>
<tr>
<td>Blue</td>
<td>Green</td>
</tr>
<tr>
<td>Green</td>
<td>Blue (darker shades)</td>
</tr>
</tbody>
</table>

### Note:
- TO obtain consistent results, the same exposure time must be used for all exposures in the same image.
- The use of a yellow filter, if desired, will reduce the effectiveness of certain materials, so use with caution.
- A yellow filter may be necessary to copy the image on certain papers, especially those that are sensitive to blue light.
- Most colors can be copied easily. Some, however, require variations from the normal exposure time.

**Copied Colors**
1. Insert a light shield into the processor chamber.

2. Then insert the plate into the processor chamber of the processor and press the charge button (Figure I).

3. After you press the charge button, count off 10 seconds. The time would be 30 seconds, increased to 10 seconds. For example: If your normal exposure time would be 30 seconds, you would count off 10 seconds. If your exposure time would be 15 seconds, you would count off 5 seconds.

EXCEPT: Expose the plate 25% longer than manual (Par. 1 through 16, 5 through 10).

4. Remove the plate and press the charge button (Figure 2).

*Standard Xerography Masters-Making Equipment*

...with only a slight variation in the procedure already described, any xerographic image may be transferred directly to an unsensitized metal offset master. The advantages of metal masters are primarily shorter runs and greater dimensional stability of the image. Medial masters may also be used for subsequent retouching with no deterioration of image quality due to atmospheric conditions. The most desirable advantages, however, is that inexpensive, unsensitized, direct-image metal masters are used, eliminating the need for film negatives, exposure frames, chemical solutions, or darkrooms. The following step-by-step procedure demonstrates how to prepare metal offset masters with your...
1. Clean the plate in the normal manner.
2. Place the master in the heat furnace for 90 seconds.
3. Place the plate on the plate for 5 seconds (Figure 7).
4. Let the master remain on the plate for 10 seconds (Figure 6).
5. Turn power switch ON—this permits the charging operation.
6. Slide the line developer tray out of the proctor.
7. With the metal master on top of the plate, position and place the plate on the holder shield in front of the visible halftone.
8. Position a metal master against the inner edge of the plate frame over the visible halftone.
9. Hold the end of the master firmly against the plate and withdraw the light shield from the grooves.
10. Let the master remain on the plate for 10 seconds (Figure 6).
11. Continue to hold the master against the plate and slowly peel it from the end of the master until the opposite plate is revealed. This prevents shifting, which is the opposite of sticking.
12. Place (Figure 7) the plate in the heat furnace for 90 seconds.
13. Clean the plate in the normal manner.
designed to let you know the right side of the image. Always refer to the instructions that come with your product for the correct usage.

---

**Expasion Lamp Replacement**

When replacing the expansion lamp, be sure to follow the instructions provided by the manufacturer. Always replace the expansion lamp with one of the same type and wattage. If the expansion lamp is not properly replaced, it may cause damage to the printer or affect the quality of the resulting images.

---

**Changing the Developer Cartridge**

When changing the developer cartridge, be sure to follow the instructions provided by the manufacturer. Always replace the developer cartridge with one of the same type and capacity. If the developer cartridge is not properly replaced, it may cause damage to the printer or affect the quality of the resulting images.

---

**Adhesion of Fuser**

To ensure proper adhesion, follow the instructions provided by the manufacturer. Always clean the fuser before using it. If the fuser is not properly cleaned, it may cause damage to the printer or affect the quality of the resulting images.
ACCESSORY EQUIPMENT AND AD

As clear acetate, sheets require vapor fusing. Consult with other clear or frosted surfaces. Trans-Positive, as well
shaded positive-working metal acetate masters available from Xerox. Discharge-type duplicators, overlays, and an intermedium for press
overhead and motion projection slides, intermediums for use with
Trans-Positive sheets provide an additional transfer medium ideal for

Lines: Snapake may also be used on acetate
place a suitable for reproduction of transparent. Dehumidifiers passing through
does not crack, peel, or chip, and has a longer reproduction smooth,
cutting or stripping. Operates to highness of other imprints
original copy for reproduction by Xeroxing. It eliminates erased,
Snapake Correction Fluid is a versatile aid in preparing or correcting

Sheet
Trans-Positive
# COMMON TROUBLE... THEIR CAUSES AND REMEDIES

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank Spots</td>
<td>There is a problem with the printer or paper feed mechanism.</td>
<td>Check the printer settings and try different paper types.</td>
<td>Adjust the printer settings, try a different printer.</td>
</tr>
<tr>
<td>No Copies</td>
<td>The printer is not receiving the correct commands.</td>
<td>Check the printer's command settings.</td>
<td>Adjust the printer's command settings.</td>
</tr>
<tr>
<td>Loss of Data</td>
<td>The printer's memory is full.</td>
<td>Increase the printer's memory capacity.</td>
<td>Upgrade the printer's memory.</td>
</tr>
</tbody>
</table>

**Note:** If the printer is not printing at all, check the power supply and printer connections. If the printer is still not printing, contact the manufacturer's support for further assistance.
14. CHEMICAL RESIST IMAGES:

By conventional methods.

13. CONTINUOUS TONE:

Tone, Try and "scanning" metallic (dunk exposure).

Photographs may be copied by electrographically by means of the

12. SOLID AREAS:

Copy. Try of the Tone, Try, balloons may be copied by xerography.

11. HAFTONES:

Copy. The xerography is ideal for making single copies, or preparing paper

10. BOOK COPYING:

made of the book. This may be done by xerography.

9. COPYING SHINGLED BOARDS:

The 9 x 13 1/2" developable area of the xerographic plate.

8. ENLARGING AND REDUCING:

may be made by xerography.

7. OVERHEAD PROJECTIONS:

acetate or film-base images for overhead projectors may easily

6. LANTERN SLIDES:

which are then used together.

5. MICROFILM PROJECTION:

images are made of it. The film is held in the projector

4. OFFSET MASTERS (PAPER, METAL):

press arrange, than by heat.

3. TRANSLUCENT AND TRANSPARENT COPIES:

made from one xerographic image.

2. MULTIPLE COPIES:

printed on one or both sides.

1. SINGLE COPY:

adapted to varied company needs.

Below are some of the common uses of xerographic

APPLICATIONS
HALOID XEROGRAPHS ARE UNTITLED EXCEPT AS NOTED:

1. The Sibyl
4. Michael Flecky, Society of Jesuits, Master of Fine Arts
7. William Gratwick
8. Jeanne d' (Joan of Arc), for John Lennon
   Craig, c. age 13, 1974, Lutheran Children's Home of
   the South
   Faye, c. age 7, 1974
10. Eugene David Markowski, Samaras House, Albright-Knox
11. Frederick Hartt, a George Segal, Albright-Knox
17. Elizabeth Garver, Richard Gray
20-
21. Owen Butler, Luiz Monforfe
22. Make carpet, magic
23. Blue interior landscape
25. I'll live in you if you'll live in me
   I am the lord of the dance said he.
26. The last time I saw you, Golda Meir
28-
30. The manifest spirit of Mertha Berdine (triptych)
31. Sweet Dreams
38. Gerald LaMarsh
39-
40. Kathleen
41. Mrs. T (Bessie Taylor)
42. Julie Gelfand, Steve Piper
43. A Fairy for the Atlanta children
    c. 1952, 1981
53. Nancy