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ABSTRACT

This guide to the design and production of overhead transparencies begins with a matching test of related terminology and definitions. Introductory materials include an outline of advantages and disadvantages of using transparencies; a list of recommended uses of the overhead and transparencies; tips for overhead presentations; general presentation techniques; criteria for evaluating transparencies and presentations; and suggestions for the storage of transparencies. Different types of transparencies are then described and guidelines for transparency design are provided. Mounting, masking, and overlaps are also described, as well as lettering techniques for schools and media centers. Instructions are provided for reducing pictures with the overhead projector, using an opaque projector to produce lettering, free cutting letters, and creating a visograph, i.e., a transparent-faced display pocket with one open edge. The list of resources that concludes this guide includes the names and addresses of suppliers of various materials, including art supplies, clip art, lettering, transparency films and pens, stencil guides, transparency tape, and dry transfer letters. (EW)

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MAKING IT WITH MEDIA

TRANSPARENCY DESIGN

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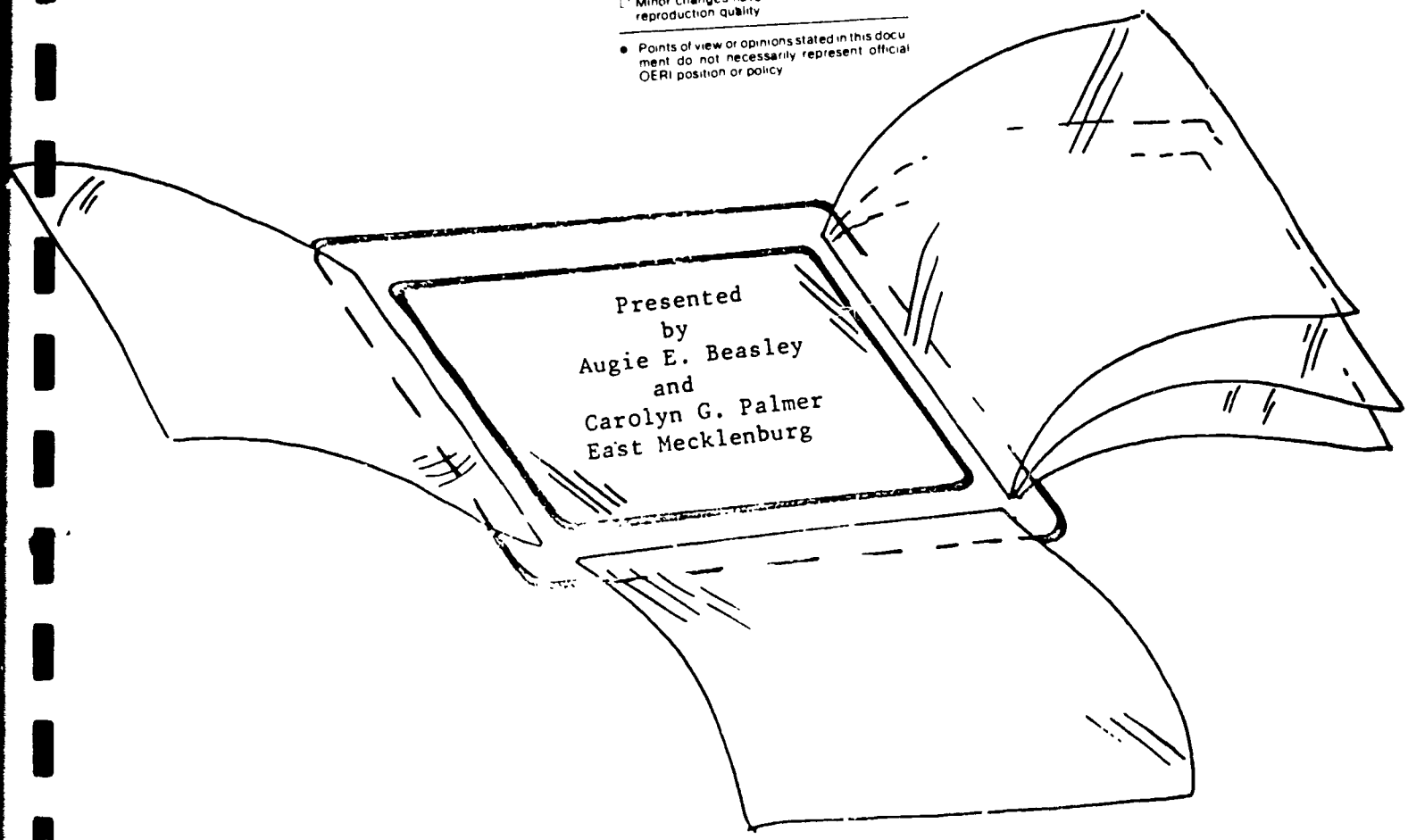

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TEST YOUR KNOWLEDGE OF TERMINOLOGY

Try to match the terms on the left with the definitions located on the right.

1. Aperture___
2. Base cell___
3. Colored line transparencies___
4. Color adhesive___
5. Keystone effect___
6. Layout sheet ___
7. Line drawings___
8. Mask___
9. Opaque___
10. Overlay___
11. Register___
12. Squaring method___
13. Transparent___
14. Progressive disclosure___
15. Diazo___
16. Clip art___
17. Photosketch___
18. Polarizing___
19. Clay-based paper___
20. Color lift___
21. Mount___
22. Faxable___
23. Light table___
24. Master___
25. Electrostatic copy___
26. Realia___

a. A line drawing illustration from a black-and-white, continuous tone photograph
b. Material or printed matter containing carbon and capable of reproduction
c. Projected image which is wider at the top than at the bottom or on one side than on the other
d. Specific type of acetate transparency that produces color when exposed to the heat process
e. Adhesive-backed transparent or translucent color printed on thin acetate
f. Frosted glass with a light source beneath the glass
g. Using a grid to enlarge, reduce, or distort artwork
h. Exact positioning of successive sheets of acetate to form one composition
i. Three-dimensional materials
j. An opaque overlay for covering areas of a transparency
k. Materials that cannot be penetrated by light
l. Frame for holding transparency
m. Paper having outline of the transparency opening drawn on it and used in designing master
n. Materials that transmit light
o. Acetate taped to the back of a mount
p. Sometimes referred to as picture transfer
q. Process of exposing portions of the transparency message a little at a time
r. Adding motion to a transparency
s. Used to produce a color lift transparency
t. Artwork for publication purposes
u. Photocopy
v. A process which uses ultraviolet light and ammonia in producing a transparency
w. Material made or arranged for the purpose of reproducing additional copies
x. Opening through which projection light passes on an overhead transparency mount
y. One or more acetate sheets containing additional information and attached to the face of the mount
z. Drawings in which there are no grays and in which texture is obtained with black and white lines or dot patterns

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USING OVERHEAD TRANSPARENCIES

ADVANTAGES OF THE OVERHEAD AND TRANSPARENCIES

* Image manipulation
* Use in a lighted room
* Ease of operation
* Ability to visualize relationships
* Ease of storage and retrieval of transparencies
* Inexpensive to produce
* Control pace of presentation
* Prepare materials ahead of time (in comparison with chalkboard)
* Design to meet local needs
* Use with other media

DISADVANTAGES OF THE OVERHEAD AND TRANSPARENCIES

* Low-quality transparencies
  - Too much information
  - Lacks punch--color
  - Confusing design
  - Intricate drawings
* Bad presentation techniques
* Not a photographic image
* Misused
  - Too much copy on one transparency
  - Leave projector on after the visual has been removed
  - Used in lieu of a handout

EXCELLENT USES OF THE OVERHEAD AND TRANSPARENCIES

* Spacial relationships (maps)
* Temporal relationships (time line)
* Organizational relationships (charts)
* Statistical relationships (graphs)
* Mechanical workings (drawings)
* Image comparison
* Reinforce main points
* Important sayings
* Puppets
* Graphic enlargement

TIPS FOR OVERHEAD PRESENTATIONS

SCREENS

* Avoid keystoning (a fan-shaped image) by slanting the top of the screen forward or the bottom backward.
* Avoid using a screen smaller than 60x60 inches with the overhead.
* Determine screen size by dividing the distance to the farthest viewer by six. Example--If the distance to back row is sixty, divide sixty by six. The screen should be 10 feet.
* A mat surface screen is best.

GENERAL PRESENTATION TECHNIQUES

* Keep transparencies simple.
* Maintain eye contact.
* Use large, easy-to-read type.
* Check the focus before using the first transparency.
* Check position of transparency on screen before beginning.
* Turn projector off when changing transparencies or when you have finished talking about the transparency.
* Sit or stand beside the projector.
* Use the transparency to present only key ideas. Prepare a handout for detailed information.

QUESTIONS TO CONSIDER IN EVALUATING OVERHEAD PRESENTATIONS

THE TRANSPARENCY (View the transparency from 30 feet.)

1. Is the type large enough? Can all parts be read easily?
2. What is seen first? Center of interest?
3. What about eye movement? Is the composition organized?
4. Is the message simple and easy to follow?
5. Is the design balanced? Does anything bother me?
6. Has too much copy been used on one transparency?
7. Has a horizontal format been used?

THE PRESENTATION (Have another person/s critique your presentation.)

1. Was the screen size adequate for back row viewers?
2. Was the screen positioned so each viewer could see?
3. Were the transparencies checked for focus? Correct position on screen?
4. Was the projector turned off between transparencies?
5. Was a pointer or pencil used to point out information?

STORAGE OF TRANSPARENCIES

MOUNTED

* Steel File
* Plastic Case
* Pamphlet Box (May be cut from a large soap box)
* Two-Drawer Cardboard File
* Three-Ring Notebook
* Apple Box or Duplicator Paper Box Cut to Make a File

UNMOUNTED

* Pocket Folders
* Pamphlet Box
* Three-Ring Notebook
* File Folder into Steel File Drawer

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TYPES OF OVERHEAD MATERIALS

REALIA

Realia is the term used to describe three-dimensional objects. Opaque objects will project black, and transparent objects--test tubes, plexiglas, etc.--will be enlarged. Use is limited only by the imagination.

Several Ideas for Use

* Use cut-out shapes for a puppet show. Attach popsicle sticks to the cardboard figures for ease in movement.
* Use cardboard shapes to teach the different geometric shapes in math.
* Use cardboard shapes to demonstrate concepts such as on, under, into, over, etc.
* Punch holes into a sheet of cardboard to form a solar system. Project on ceiling for an astronomy lessson.
* Use small leaves to discuss leaf shapes and tree identification.
* Place iron filings into two sheets of acetate taped together and use a magnet to show attraction.
* Use buttons, beans, or seeds to show concepts of addition, subtraction, and multiplication.

HANDMADE TRANSPARENCIES

TRACED

Good Sources of Artwork for Tracing

Coloring books
Line drawings from children's books
Commercial clip art books and files
Comic strips or Comic books
Newspaper advertising
Simple outline maps

Process for tracing

Use a simple line drawing
Tape the drawing down
Place acetate over drawing and tape down
Trace
*Remove tape from acetate and turn over to add color
Add color with slanted lines, crosshatching, dots, patterns

*Color added to the back will prevent smearing.

HAND-LETTERED

Ideas for Lettering

Newspaper headlines
Stencils
Dry transfer letters

Hand-lettering Tips

Use a blue-lined grid paper under the clear acetate.

Do not use a ruler. Try to make flowing curved lines for letters.

Use pull-down strokes of the pen.

Use size and bulk to emphasize ideas. or Enclose in a box or geometric form.

Use all caps for headings and upper and lower case for message.

Reversal-type letters may be made by outlining letters, drawing a line around the word, and coloring the area between the line and the outlined letters.

A shadow effect may be obtained by shading one side of each letter.

Overlapping large outline letters will allow more letters to be placed in a space.

Adding Color to Handmade Transparencies

Color Adhesive Film

Graphic Tapes (great for line and bar graphs)

Colored Acetate

MACHINE MADE TRANSPARENCIES

THERMOGRAPHIC

Since this is a carbon-heat process, carbon-based materials must be used for the master.

Materials Which Contain Carbon and Can be Used for Producing Transparencies

Black Printer's Ink (found in newspapers, books, magazines, etc.)
India Ink
Electrostatic Copy (photocopying)
#2 soft lead pencil
Primary Typewriter with Reproducing Ribbon

Types of Copy Masters

Professionally produced artwork masters
Tear Sheets
Traced Masters (#2 soft lead pencil for tracing)
Electrostatic Copy (photocopy)
Typed Masters (Primary typewriter with carbon ribbon)
Paste-up or Assembled Master (number of sources used and arranged on layout sheet and run as master)
BE AWARE OF COPYRIGHT LAWS!

Adding Color to Thermographic Transparencies

Use a felt-tip pen to color desired area. Use same techniques described under handmade transparencies.

Use colored line transparency material.

Use colored acetate.

Use colored adhesive material.

Use diazo film.

Transparencies may be made from electrostatic copy machines. Check with the manufacturer to see what transparency materials are available from them.

Transparencies may also be made from computer laser printers. If your system or school has one, check to see about transparency film.

DIAZO

The diazo process is not widely used by classroom teachers or media specialists. The process is much more time-consuming than the thermographic process.

Materials Needed

Master
Sheet of glass
Source of ultraviolet light (sun, sun lamp)
Diazo film (available with colored or black line on clear background, or black line on colored background)
Large gallon pickle jar (empty of course)
Piece of sponge
Bottle of 28% ammonia

Masters (must be capable of translucency and opacity)

Tracing paper and India ink
Plastic
Blackline heat copy
X-ray film
Photocopy
Photographic negative

Steps Of Process

Make a master and sandwich assembly with a rigid piece of masonite or white cardboard on bottom, diazo film (emulsion side up), master over film image side down, and cover with transparent glass.

Expose to ultraviloet light. Tests should be run to determine exposure time.

Developing procedure:
Place sponge in bottom of pickle jar.
Pour small amount of ammonia on sponge.
Insert diazo sheet.
Place lid tightly on jar.
Leave film in jar until the color is the proper intensity.
Remove and mount.

COLOR LIFT

Color Lift is often referred to as picture transfer. It is an inexpensive method for obtaining photographic, four-color transparencies. Color lifts require clay-based paper. TIME, NATIONAL GEOGRAPHIC, HOLIDAY, and LIFE magazines are printed on clay-based paper.

Color Lifts Using Laminator

Select original from a magazine with clay-based paper.

Test paper for clay-coating by wetting finger and rubbing light area on picture you wish to use. If a light milky liquid or chalky substance remains on your finger, it is clay-based.

Trim picture leaving ¼ inch margin on all sides.

Place two pictures of identical size back to back, or make a sandwich with two pictures face out and larger sheet of paper between.

Run sandwich through laminator TWICE.

Trim sandwich so each picture falls free and is trimmed as desired.

Place laminated picture in tray of warm water (paper-side upmost) for at least 3-5 minutes.(A mild detergent added to the water speeds up the process.) Sometimes picture must be left for 10 minutes.

Test from time to time by attempting to flick back a corner of the paper. When ready, the blank paper will pull off or roll off with ease.

After paper is removed, it is necessary to remove milky substance by rubbing firmly with finger or soft sponge.

Transparency should be dried.

To strengthen transparency, it may be run through the laminator again.

Color lifts are good as craft projects for students.

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GUIDELINES FOR TRANSPARENCY DESIGN

1. Keep it simple. Use a single idea, concept, or comparison per transparency. Illustrate with line drawings.
2. Use block lettering for readability.
3. Vary type size for emphasis. Use bold capitals for headings and smaller, lower case letters for information.
4. Draw attention with lines, arrows, boxes, etc.
5. Use horizontal format and avoid vertical lettering.
6. Avoid placing illustrations in the center of the transparency. Divide the sheet into thirds (vertically and horizontally) and locate illustrations at any of the four spots where the lines intersect.
7. Place materials in the upper portion of the transparency.
8. Keep more space outside the type/illustrations than between the figures.
9. Create unity with space, similar shapes, and lines.
10. Use formal and informal balance. Formal becomes monotonous if used exclusively.
11. Use color to achieve emphasis.
12. Use only key words or short sentences.
13. Limit lines and words per line to avoid crowding information. GOOD RULE--No more than seven lines per sheet and no more than seven words per line. (Variations of this rule state 8-10 lines and 6-8 words per line.)
14. Type size should be--24 points or 18 points for the headings and 14 points for information. No lettering should be smaller than $\frac{1}{4}$ inch. NEVER USE PICA OR ELITE TYPE TO PRODUCE MASTER.
15. Use line and geometric form to add emphasis to the message.

EXAMPLE--Single Idea or Quote
Billboard by enclosing in a rectangle, circle, or oval.
Headings
Set off from message with geometric form or line.

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MOUNTING, MASKING, AND OVERLAYS

MOUNTING

A transparency frame may be made from most hard cardboard such as poster board, file folders, soap or cereal boxes, or scrap cardboard.

Advantages To Mounting

1. Eliminates light leaks around the edges and cuts down on glare
2. Allows easier handling
3. Permits overlays and masks to be added
4. Allows presenter to write notes/questions on mounts
5. Provides help in storing and organizing
6. Allows transparency to lie flat

Steps

1. Place frame facedown onto work area
2. Place transparency on mount (image appears reversed)
3. Position and tape corners into place with Magic Mending or masking tape
4. Turn the transparency over and check position of material
5. Place facedown again and tape all edges with Magic Mending or masking tape

REMEMBER--Use a horizontal format when designing transparencies.

MASKING

The cheapest method for progressively exposing information on a transparency is a mask--an opaque overlay.

Types of Masks

1. Area Masks There are two types of area masks--full and partial.
2. Accordion Fold Mask Good to use to slowing uncover main points.
3. Strip Mask Allows sections to be randomly revealed in comparison with the accordion fold which has a locked-in sequence.
4. Pivot or Circular Mask Good to use for language drills. Circular masks are held in place by a paper fastener, thumbtack attached to an eraser, etc.
5. Sliding Mask Information is exposed by moving the mask toward the bottom of the mount.
6. Flip-Flop Mask Can be flipped to cover either half of the transparency.

OVERLAYS

When information must be added which cannot be divided into parts, overlays are used to present the whole composition. Overlays are transparent masks.

Two Types of Overlays

1. Fixed Sequence All overlay sheets are mounted to the same edge.
2. Random Sequence Each overlay is mounted to a different edge.

Attaching With Tape

1. Start with mounted base cell
2. Position overlay
3. Tape into position covering length of overlay with tape
4. Attach half of tape to acetate sheet and half to the mount
5. Trim excess tape

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Factors to Consider in Selecting Lettering Equipment or Materials

1. What quality of lettering can be produced with this method?
2. What variety of styles and sizes is possible with this method?
3. How difficult is this process to master?
4. How much time does this method take?
5. How expensive is the initial cost of the lettering equipment or materials?
6. Is the cost basically a "onetime" cost or is there a continuing cost?
7. How expensive is this method if you are doing considerable amounts of lettering or when considered over a long range period?
8. How much waste is involved in unused materials?

A Synopsis of Common Lettering Methods

Freehand Lettering

Quality: poor to good
Variety: depends on talent of user
Difficulty of use: easy to very difficulty--depending on quality
Time involved: short to moderate
Initial expense: low
Long term expense: low
Wastage of materials: none

Plain Cutout Letters

Quality: fair to good
Variety: fair
Difficulty of use: easy if used as is; moderate if used for tracing
Time involved: short if used as is; moderate to long if used for tracing
Initial expense: low
Long term expense: moderate to high if used as is; low if used for tracing
Wastage of materials: moderate to high if used as is; none if used for tracing

PIN BACK LETTERS

Quality: good
Variety: limited
Difficulty of use: easy
Time involved: short
Initial expense: moderate
Long term expense: low
Wastage of materials: low or none

Adhesive Back Letters

Quality: good to very good
Variety: fair
Difficulty of use: easy
Time involved: short
Initial expense: moderate
Long term expense: moderate to high
Wastage of materials: moderate to high

Dry Transfer Letters

Quality: very good
Variety: very good
Difficulty of use: easy to moderate
Time involved: moderate
Initial expense: moderate
Long term expense: high
Wastage of materials: high

Cardboard or Plastic Stencils

Quality: fair
Variety: limited
Difficulty of use: easy to moderate
Time involved: short to moderate
Initial expense: low
Long term expense: low
Wastage of materials: none

Rubber Stamp Lettering

Quality: fair
Variety: limited
Difficulty of use: easy to moderate
Time involved: moderate
Initial expense: low
Long term expense: low
Wastage of materials: none

Wrico

Quality: good to very good
Variety: good
Difficulty of use: easy to moderate
Time involved: moderate (once mastered)
Initial expense: moderate
Long term expense: low
Wastage of materials: none

Leroy

Quality: good to very good
Variety: very good
Difficulty of use: difficult
Time involved: moderate (once mastered)
Initial expense: high
Long term: expense: low
Wastage of materials: none

Alphaline Lettering

Quality: good
Variety: available in 1 or ½ inch tape; available in 5/8, 3/8, or 1/4 inch letters
Difficulty of use: easy
Time involved: moderate
Initial expense: moderate
Long term expense: moderate
Wastage of materials: low

Headliner Letters (Kroy)

Quality: excellent
Variety: typediscs available in over 25 typestyles in sizes from 8-36 point
Difficulty of use: easy
Time involved: short
Initial expense: very high
Long term expense: high
Wastage of materials: moderate

Ellison Letters

Quality: excellent
Variety: available in seven different alphabet styles and over 200 decorative dies
Difficulty of use: easy
Time involved: short
Initial expense: very high
Long term expense. low
Wastage of materials: low

NOTE--A simple lettering kit may be purchased which includes several lettering sizes. The format is similar to a plastic ruler with the letters cut out for tracing. This is a good buy, is simple to use, and is available from school supply houses.

Wrico templates are also available which can be used with ballpoint pens. The quality is good, the templates are easy to use, and the expense is low.

A rapidigraph pen and guide is also a good buy. Simple to use, inexpensive, good quality, and available locally.

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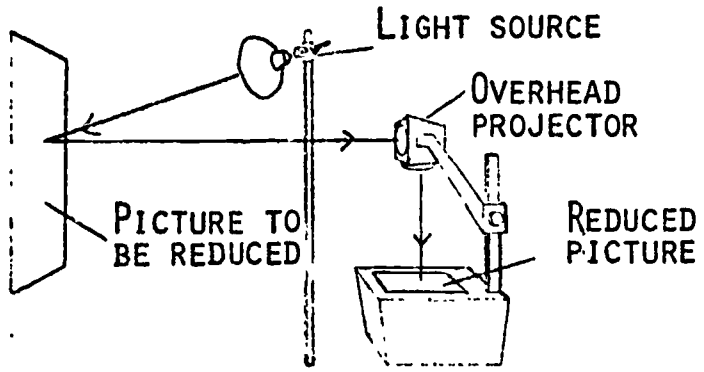
REDUCING WITH THE OVERHEAD



1. SET UP AND TURN ON THE PROJECTOR. FOCUS AND ADJUST THE LIGHT BEAM TO COVER THE EXACT PORTION OF THE LARGE CHART THAT YOU WANT TO REPRODUCE IN REDUCED SIZE.

2. SET UP PHOTOFLOODS OR SPOTS TO LIGHT THE CHART.

3. TURN OFF ROOM LIGHTS AND THE PROJECTOR LIGHT. KEEP THE SPOTS ON.

4. THE REDUCED PICTURE WILL APPEAR ON THE PROJECTOR STAGE, WHERE TRANSPARENCIES ARE PLACED. TRACE THE PICTURE ON WHITE PAPER. LATER, PREPARE THE TRANSPARENCY.

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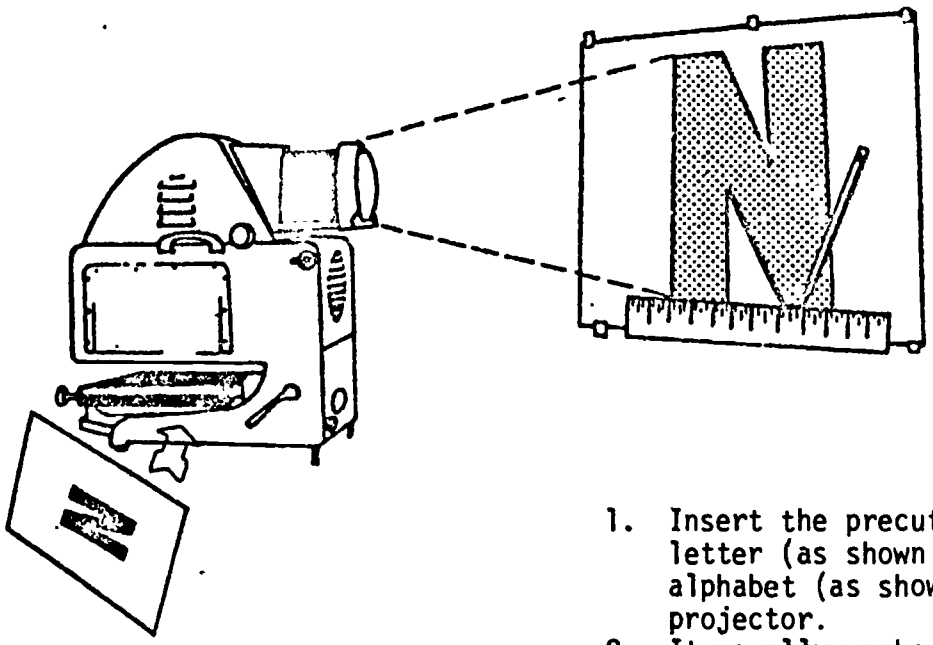
OPAQUE LETTERING

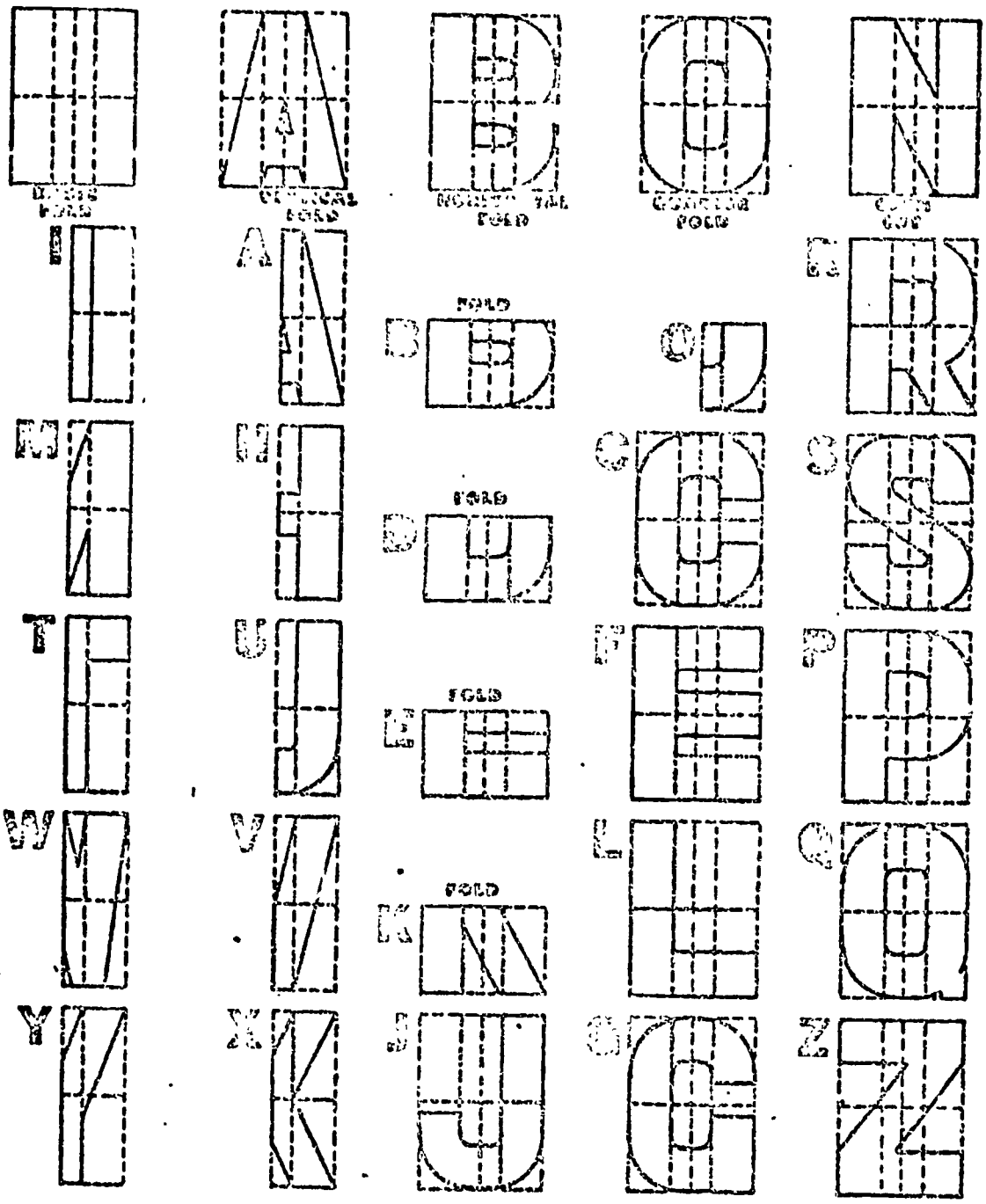


1. Insert the precut or printed letter (as shown above) or the alphabet (as shown below) in the projector.
2. It usually works better if the letter or alphabet is attached to a sheet of contrasting paper or cardboard to hold the material in place and to increase visibility for tracing.
3. Turn off lights in the room while tracing.
4. For letters with straight edges, a ruler can be used (as shown above).

ABCDEFGHIJ
KLMNOPQRS
TUVWXYZ12
3456789&?
!£()«»:;

Free Cutting Letters

1. Have all "blocks" the same size.
2. Use straight edges to line up sides, etc.
3. Maintain consistency (widths, heights of crossbars, all caps or all lower case, etc.)
4. Picture the letter in your mind before beginning.
5. Save time by analyzing the number of each letter needed and cutting all of one letter at the same time.
6. Know the space where the lettering will be used to adjust size.
7. Experiment with shapes to add variety.



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Visograph

A visograph is a transparent-faced display pocket with one open edge. It is very useful for displaying unmounted pictures under a protective plastic covering. In addition, a visograph may be used as an erasable holding device fc work sheet, test, and outline maps, since one may write or draw on the plastic surface with grease (eax) pencil or water soluble felt pens, and then erase quickly and easily without damage to instructional materials.

Material and Equipment
Plastic or acetate (.005' guage or thicker is most desirable)
Cardboard
Pressure-sensitive tape
Scissors
Razor
Metal-edge ruler

1. Cut the cardboard base to the desired demensions (according to the size of materials to be inserted into the visograph). A base of 11" x 14" will accommodate most pictures and worksheets. Cut the plastic to the same width, but slightly shorter length. Cut three pieces of tape longer than the width of the cardboard. Apply one piece to the back bottom edge of the cardboard, allowing the tape to overlap by half its width. Turn the cardboard over, and place the acetate on the sticky tape, leaving a separation between board and plastic of about 1/8". Add a second piece of tape over the top of the first piece of tape; trim off the excess tape at the ends. Add a third piece of tape at the opposite edge of the plastic sheet and fold over; trim off excess tape.

2. Tape the plastic sheet up and onto the cardboard.

3. Tape along both sides.

4. This is one visograph. Three or more is what is normally used for display purposes. To align three, place face up on the table, and separate by 1/4". Use a T-square to align the bottom edges. Apply tape to hold the sections together. Turn over and apply tape to the back.

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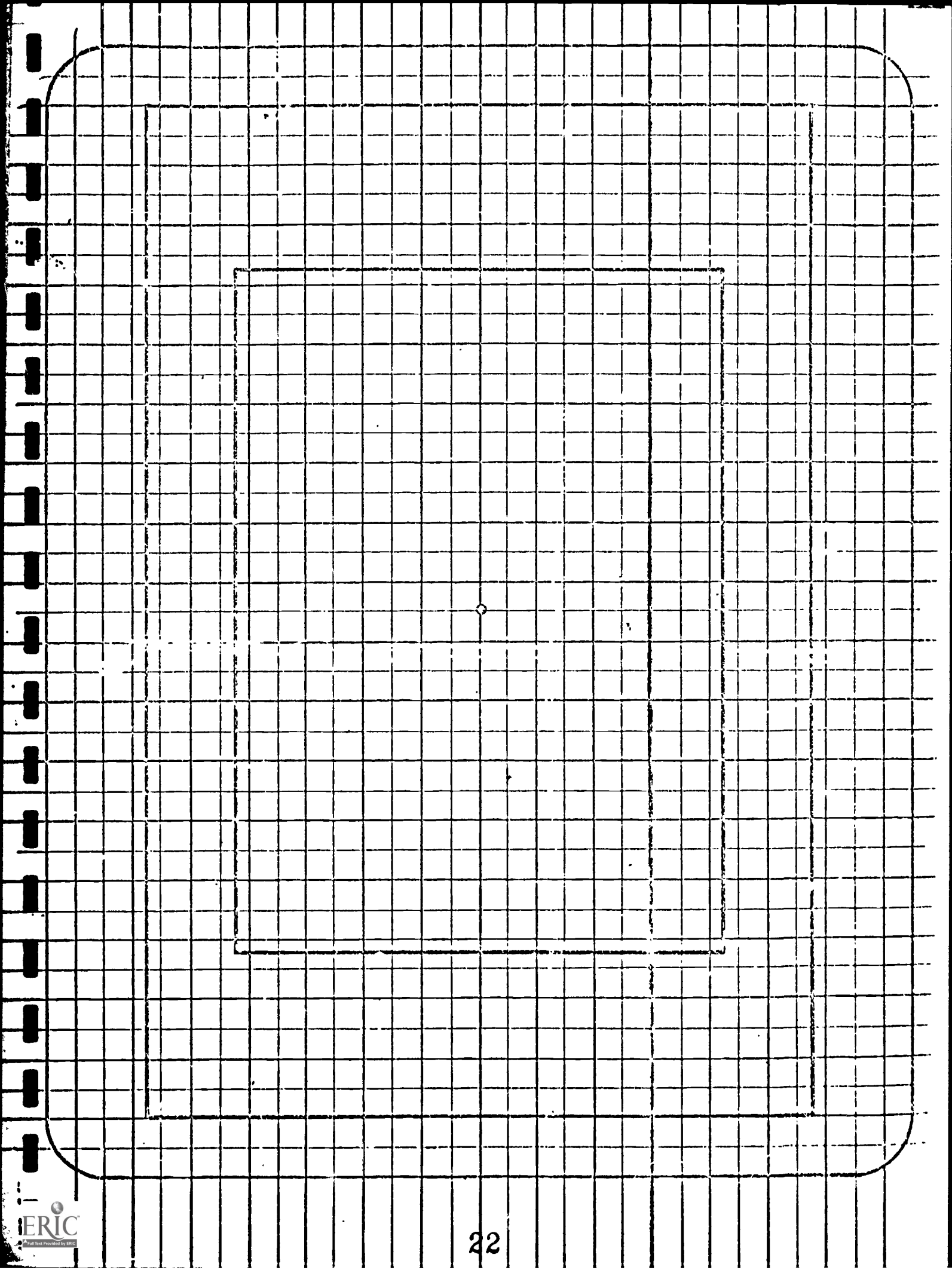

RESOURCES

The following list contains the addresses of materials suppliers. Local school supply, office supply, art supply, and stationery stores may also carry some of the supplies that you need.

Art Supplies (General)

DICK BLICK
P.O. Box 1267
Galesburg, IL 61401

Clip Art

Library Educational Institute Inc.
RD 1, Box 219
New Albany, PA 18833

A.A. Archbold, Publisher
P.O. Box 49657
Los Angeles, CA 90049

Hartco Products Company, Inc.
170 West Pearl Street
West Jefferson, Ohio 43162

3M Company
Visual Products
3M Center
St. Paul, Minn. 55101

Lettering

Highsmith
P.O. Box 800
Ft. Atkinson, Wisconsin 53538
(Wrico Lettering Kits, Wrico Manuscript Kit, Letter guide Scriber, Helix Lettering Guides, Dry Transfer Letters, Lettering Stencils, Cardboard Letters and Numbers, etc.)

Demco, Inc.
P.O. Box 7488
Madison, Wisconsin 53707
(Alphaline Lettering System)

Keuffel and Esser Company
Education/AV Products
20 Whippany Rd.
Morristown, N.J. 07960
(Leroy)
(Polarizing Materials)

Kroy Inc.
P.O. Box
St. Paul, Minnesota, 55164
1-800-328-1306
(Kroy Headliner)

Ellison Educational (Ellison Letter Cutting Machine)
P.O. BOX 7986
Newport Beach, CA 92660

(Rapidograph pens and guides may be purchased at stationery stores.)

Transparency Film and Pens

Stones School Supply (Transparency pens, polarizing material,
1000 Central Avenue transparency mounts, colored acetate,
Charlotte, N.C. 28212 and other items.)

Cavins (State Contract) (Transparency film--Rainbow
Raleigh, N.C. (1-800-662-7213) and Colored Line)

(Colored adhesive and lettering templates may be purchased at any art supply store.)

Other

3M Company (Transparency materials of all types)
Visual Products Division
2501 Hudson Road
St. Paul, MN 55101

Koh-i-noor Rapidograph, Inc. (Stencil Guides for Lettering)
100 North Street
Bloomsburg, NJ 07110

Chartpak Rotex (Transparency Tape for graphs)
4 River Road
Leeds, MA 01053

Charles Besler Co. (Transparency pens, acetate, frames,etc.)
219 South Eighteenth Street
East Orange, NJ 07018

Letraset Inc. (Dry Transfer Letters)
2379 Charleston Road
Mt. View, CA 94040

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