

**Preparation of
Engravings and Duplicate
Printing Materials
for Good Newspaper
Reproduction**

Report No. 2

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JOINT COMMITTEE ON NEWSPAPER PRINTING

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Foreword

This brochure is the second of a series prepared by the A.N.P.A.—A.A.A.A. Joint Committee on Newspaper Printing.

As explained in the foreword of the first brochure, the committee is composed of a group of advertising production executives, appointed by the American Association of Advertising Agencies, who are working jointly with a group of production technicians chosen by the American Newspaper Publishers Association.

Report Number One, issued in December 1948, explored the subject of art preparation for good newspaper reproduction.

In this report, Number Two, the Committee carries on that exploration through the preparation of photo-engravings, electrotypes, plastic plates, stereotypes and mats to help agency people, advertisers and newspapers obtain the best possible reproduction.

The material contained in this report is actually a statement of the standards of quality necessary to assure the most satisfactory results. It is presented to acquaint the men and women engaged in the preparation of newspaper advertising with what is considered good practice today, and the Committee feels that the "MUSTS" of good newspaper reproduction bear repeating time after time.

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NEWSPAPER PRINTING

Good reproduction of newspaper advertisements is dependent primarily on these five factors:

1. Good art work

The right kind of art work for the newspaper process. (See Report No. 1)

2. Clean, sharp, new type

3. Good engravings

a. Cleanly etched and with proper depth in screen and open spaces. (See pages 8, 9, 10, 11)

b. All shoulders removed by careful etching and close routing.

4. Good pattern plates

a. Of sufficient depth to allow for loss in duplicating materials.

b. Pattern plates should be molded full depth with heavy shells. They should be routed carefully to eliminate all high spots in non-printing areas, and to eliminate all shoulders.

5. Good duplicating materials

Electrotypes, plastic plates, stereotypes and mats (baked or cold molded).

Because of the necessity for great speed, rotary newspaper printing differs considerably from other relief or letterpress printing processes in that the final printing is done from curved stereotypes against soft packing without benefit of make-ready—not directly from electrotypes, as in the case of job or magazine printing.

The requirements necessitated by printing conditions applicable to the newspaper field must be met by the producers of plates and mats of advertisements appearing in the thousands of newspapers in this country. The newspaper stereotyper and pressman cannot produce creditable results from materials manufactured by others unless definite standards are maintained by those manufacturers. This means that the highest type of workmanship and material should be utilized at all stages in the development of the duplicating material sent to newspapers, with due attention to the particular requirements of newspaper printing.

ENGRAVINGS

Line Engravings

The use of soft or semi-hard packing on impression cylinders of newspaper presses brings up the subject of what is proper depth in the original line engravings and subsequent removals. Newspaper press conditions require that line engravings sent to newspapers should be etched to a depth of .025 of an inch in all spaces. They should be deeply etched with special attention given to first and second bites and closely routed to eliminate shoulders and to increase depth to at least .040 of an inch in all open spaces over $\frac{1}{4}$ of an inch. The newspaper's stereotyper must deliver a plate to the pressroom with all non-printing areas safely below printing levels. This margin of depth should be maintained in all stages of plate-making. It calls for a high quality of workmanship all along the line.

Halftone Engravings

Assuming that your photograph, wash drawing or oil painting has been properly prepared with due attention to full separation of tone values (see Report No. 1), the next step in the reproduction of that art is in the form of a photo-engraving. With properly prepared art work, and with sufficient time allowed the engraver to do a good job, the task of manufacturing a good halftone is not difficult; most engraving shops are quite capable of carrying out the assignment with a minimum of supervision on the part of the buyer responsible for the finished result. This supervision, however, is important, because it must always be remembered that every engraving is a made-to-order product and, as such, is subject to the human element in the process of manufacturing.

ENGRAVING REQUISITES

There are six requisites necessary to the securing of good engravings:

1. **Don't rush your engraver**—One of the prime requisites for securing a good engraving is to allow your photo-engraver sufficient time in which to do his work. Remember that rushed work all too often means work poorly done.
2. **Consult with your engraver**—A second requisite is to consult with your engraver. If you wish to have your finished plate deviate from your copy in some areas, explain those differences to him so he can do an intelligent job.
3. **Check proofs**—Inspect your proofs carefully and be sure proofs are printed on news stock. Don't forget to take into consideration the loss of values which is going to take place between the original engraver's proof and the final printing in the newspaper. This loss of values, as pointed out before, takes place regardless of the kind of duplicating material sent to the newspapers.
4. **Inspection of engravings**—Inspect all engravings carefully before releasing them to your supplier for making duplicate electros, plastic plates, stereotypes or mats. Measure the depth of every Ben Day or halftone plate. Check carefully to see that routing is clean and deep and that all shoulders have been removed. In addition to your own inspection, it is earnestly suggested that you make arrangements to have your supplier of duplicate materials make a similar inspection before accepting your engravings for the making of patterns and/or duplicates. Reporting of any defects will be mutually helpful.
5. **Do not photo-engage type matter**—Type matter intended for duplicating should be electrotyped and not photo-engraved. If,

however, photo-engraving of type should become unavoidable by reason of design of layout, it is recommended that clean, sharp, new type be used for your reproduction proofs and that faces of type be selected which will reproduce well when duplicated in electros, plastic plates, stereos or mats. (See page 22, Report No. 1, for recommended faces and sizes.)

6. Do not make engravings larger than copy—Making engravings larger than copy will often result in a poor engraving. Always try to have copy larger than finished engraving.

What screen? While some subjects under certain conditions will permit use of 60- or 65-line screen, it is recommended that 55-line screen be used for advertising scheduled in large lists of newspapers or when the use of mats or stereotypes is contemplated.

What metal—copper or zinc? Copper engravings are recommended, especially if duplicating is planned. Copper is harder than zinc and, therefore, better withstands molding pressure. In addition, copper can be re-etched more readily than zinc, and generally speaking is less subject to undercutting of halftone dots. (See illustrations, pages 21, 22 and 23.) While a large majority of line engravings are made on zinc with perfect results, the committee recommends that drawings with exceptionally fine lines be engraved on copper.

What depth of etch? Experience of photo-engravers, electrotypers, matmakers, stereotypers, and newspapers indicates that the following etching depths for newspaper halftones produce the most satisfactory printing results:

LIGHT TONES	MIDDLE TONES	DARK TONES
.007 to .008 of an inch	.0045 to .005 of an inch	.0025 to .0035 of an inch

Of course, it is quite possible to etch to greater depths than indicated above, and many engravings are so made. However, it might be well

to remember that the deeper the etch, the more chance there will be of having some of the dots undercut. (See illustration, page 23.) This is a condition not apparent on proof inspection, but one which causes a great deal of trouble when the engraving is molded for duplicates.

Summary

Give your engraver sufficient time to do a good job.

Don't hesitate to consult with your engraver.

Check proofs carefully.

As proofs do not always show defects of engraving, measure plates for depth—and inspect them carefully for undercut dots or dirty bottoms and sides.

Make sure all high shoulders are removed.

Do not use photo-engraved type.

Do not attempt to use too fine a screen.

Do not make engraving larger than original art.

Use copper for halftones and fine line work; especially if duplicates are planned. Use zinc only for lettering or display type and open line work.

STEPS OF REMOVAL AND LOSS OF DEPTH

It is generally accepted that each individual step of removal from the original form of engraving and/or type results in a loss of depth. This loss of depth, together with comparatively thin ink, soft packing, and absorbent news stock, will often mean a poorly printed advertisement unless the original engraving is cleanly etched to full depth and carefully routed, and type is clean and sharp.

With the exceptions noted below, the chart on facing page shows that the average advertisement is subject to five steps of removal from the original form before it is printed. The exceptions, somewhat oversimplified, are:

- A. Advertisements which are complete engravings—in which case no patterns need be made (except as a safety precaution, or as a means of economy if large quantities of duplicates are needed). If the duplicate materials (electros, plastic plates, stereos or mats) are made from the original and not from a pattern, the number of removals is reduced from five to three.
- B. Advertisements (either all type or composed of type and engravings) which are scheduled to appear in not more than four newspapers may be duplicated directly from the form, making unnecessary the pattern, thus saving one step of removal.

NOTE: Although it is often possible to make more than four duplicates from a locked-up form, it is generally agreed that to do so is bad practice because of the tendency of the locked form to loosen and wood blocks under engravings to become distorted from heat and pressure.

NUMBER OF STEPS OF REMOVAL

by newspapers

Type of Material sent to Newspaper	Pattern Plate	Electro	Female Plastic Matrix	Plastic Plate	Mat	Flat Stereo from Mat	Page Mat	Curved Page Printing Press Stereo	Total number of removals from original form
Electro from original or form		x					x	x	3
Electro from pattern	x	x					x	x	4
Plastic Plate	x		x	x			x	x	5
Stereo	x				x	x	x	x	5
Mat	x				x	x	x	x	5

by newspapers

DUPLICATING MATERIALS

The question of what kind of duplicating material should be sent to newspapers is one that has bothered advertisers and agency people for a long time. Since both time and money as well as quality of reproduction are factors to be considered, it might be well to review the various kinds of material available, their limitations, and the quality of printed result one may expect from the material selected.

1. **Electrotypes** are accepted by newspaper publishers in general as the best duplicating material where faithful reproduction, a minimum loss from the original, and a minimum amount of shrinkage are desired.

There are several relatively new sheet molding materials used in the electrotyping process. Since building of spaces with wax to obtain proper depth is eliminated when these new molding materials are used, it is more urgent than ever that original engravings be checked carefully for proper depth in open spaces and proper depth in type bowls before molding.

Plastic plates are a comparatively new type of duplicating plate, especially suited for newspaper reproduction. In addition to faithfulness of reproduction and minimum shrinkage, plastic plates have the additional advantage of being light in weight, which permits a saving in packing and shipping costs. Newspapers should use care in removing plastic plates from blocks for future repeating. It is suggested that newspapers follow manufacturers' instructions carefully. (See *Do's and Don'ts* on page 19.)

2. **Stereotypes**, if used, should be carefully made and a baked mat used for casting. It is essential that the original be cleanly etched to full depth, with no undercutting, and that bottom be clean. Brittleness of metal makes them subject to damage in transit unless carefully packed.

3. Mats—Direct pressure-baked are acceptable by most newspapers for all types of advertisements, including those containing printable type and halftones. (See Report No. 1.) While shrinkage of this type of mat is not as great as in the cold-molded dry mat, it nevertheless is present. Extreme care should be taken by the mat-maker to retain the proper depth in molding. Proper molding combination and pressure should be used to assure proper depth in open spaces and depth in type bowls. Pattern plates should be checked carefully and all high shoulders removed before making mats. Too many mats should not be made from the same pattern plate. The number depends on the type of advertisement, but the pattern plate should be watched carefully and replaced as soon as it begins to show wear. This is an important point that is too often overlooked. Advantages and disadvantages are the same as those listed below for dry mats.

4. Mats—Cold-molded dry are suitable for advertisements consisting entirely of type (10 pt. size or larger) or advertisements containing very open line drawings, provided proper depth of open space and depth of type bowls are retained. They are not recommended for advertisements containing type smaller than 10 pt. nor for advertisements containing halftones. Two obvious disadvantages are:

1. *Inability of advertiser or agency to control quality of flat stereotype of the advertisement which the newspaper must make before incorporating into the full form, and*
2. *Shrinkage, which often affects appearance of finished result.*

Advantages are:

1. *Low manufacturing cost.*
2. *By reason of light weight, low cost of packing and shipping.*

COLUMN WIDTHS

Since some newspapers have revised their column widths to a measure narrower than 12 pica ems, it is important that all agency people and advertisers make sure their material is properly sized. A single-column advertisement scheduled to appear in a list of newspapers should not exceed $1 \frac{15}{16}$ inches in width. For advertisements of more than one column, the first column should be $1 \frac{15}{16}$ inches, with additional columns 2 inches in width. Thus a two-column advertisement should not exceed $3 \frac{15}{16}$ inches, a three-column advertisement $5 \frac{15}{16}$ inches, etc.

Unless your material is properly sized, some newspapers may be forced to make one or more additional stereo casts in order to shrink your advertisement so as to fit it into the page forms. Such shrinking is likely to affect the reproduction of your halftone illustrations and small type.

DO'S AND DON'TS

ENGRAVINGS

DO'S

Etch **LINE ENGRAVINGS** cleanly to a depth of .025. Rout to a depth of .040 in all open spaces over $\frac{1}{4}$ of an inch.

Remove all shoulders.

Etch halftones to a depth of .007 to .008 of an inch in high lights, .0045 to .005 of an inch in middle tones, .0025 to .0035 of an inch in dark tones, if molded duplicates are planned.

Check proofs carefully.

Inspect engravings carefully for proper depth and routing.

Use copper for halftones and fine line work.

Use zinc only for large type and open line work.

Work closely with your engraver.

DON'TS

Don't rush your engraver.

Don't use photo-engraved type.

Don't use too fine a screen.

Don't make vignettes for newspaper use.

Don't use an engraving with undercut dots.

Don't have your engraver enlarge from copy for reproduction. Reductions are always more satisfactory.

DO'S AND DON'TS

ELECTROTYPES

DO'S

Make sure form from which electro is to be made is properly locked up and justified.

Where rules are used, they should be beveled ~~from~~ both sides.

Use high materials around rules in form to reinforce them for molding.

Check forms to make sure everything is type high and all engravings are solidly based.

Send proof with form to electrotyper.

Absence of shoulder lines around type and illustration is essential in electrotypes.

Electrotype all typematter whenever possible.

DON'TS

Don't rush electrotyper.

Don't use rule with less than 2-point body.

Don't use old, worn type for making electros.

Don't use old worn engravings of logotypes, packages, trade marks, etc.

DO'S AND DON'TS

PLASTIC PLATES

Since plastic plates are comparatively new, we include below a few suggestions:

DO'S

Plastic plates should be molded from clean sharp patterns and should have a depth of at least .025 of an inch in all non-printing areas, and this depth should be increased to .040 in all open spaces of over 1/4 of an inch. Absence of shoulder lines around type and illustration is essential, as plastic plates are difficult to rout and tool. The character of the material and lack of color differential between printing and non-printing areas offer problems of tooling not present in metal plates.

When necessary to rout plastic plates, take slower cut and use smaller bit than for metal. A carbaloy or carbaloy-tipped router bit may be found preferable. For hand tooling, usual metal finishing tools may be used. Plates can be cut and trimmed on band saw, saw trimmer or guillotine.

Plastic plates may be safely washed with alcohol, cleaner's naphtha, carbon tetrachloride, gasoline, kerosene or turpentine.

For blocking plastic plates, double coated tape is recommended for securing to base. When nailing plates on, use small nails and drive slowly to avoid cracking. Start nailing at center and work towards edges. When necessary to nail close to printing surface, drilled holes are recommended.

Follow carefully manufacturer's recommendations for handling.

A sharper, deeper molding impression is obtained if plastic plates are blocked .921 high (.003 of an inch over type high). This gives the mat a better grip on the glass-like surface of the plastic plate and eliminates the tendency of the mat to creep or slip across the form during molding.

DON'TS

Do not attempt to bend or cut plastic plates if they are chilled; in that state they are quite brittle and may fracture or crack.

Do not mold mats from a plastic plate at temperatures of over 120 degrees or subject to this temperature for more than 30 seconds. If a re-mold is necessary, use some means of cooling the plate and base before proceeding with next mold.

Do not place unmounted plastic plates on the heated platen of a direct-pressure molding machine.

Do not clean plastic plates with type washes that contain Acetone, Benzol, Tuluol or Xylol. These agents will dissolve the plates very quickly. If in doubt about your type wash, check your supplier or test it on an old plastic plate. It would be well to follow manufacturer's recommendations.

Do not attempt to countersink blocking nails in plastic plates.

DO'S AND DON'TS

MATS








DO'S

- Use direct-pressure baked mats.
- Make sure pattern plate is of sufficient depth and free from shoulders.
- Check pattern plate often for wear.
- Make sure mat has proper molded depth to allow for loss in necessary subsequent removals.
- Make sure depth is ample in the bowl of type as well as in open spaces.

DON'TS

- Don't make mats directly from original engravings or type when large release is planned. Make pattern plates.
- Don't make too many mats from one pattern plate.
- Do not cut off bearers, fold, scratch or mutilate in any other way the printing surface of mats.
- Never use glued tape of any kind to secure mats to packing material or for attaching proofs or instructions.

XYZ TRAVEL CO.

<p>WASHINGTON See it in Cherry Blossom Time</p>  <p>WASHINGTON \$7.00</p>	<p>NEW YORK STATE See it before Easter Time</p>  <p>BARCE FLACID \$12.00</p>
<p>COLONIAL VIRGINIA Feel the drama of yesterday</p>  <p>WIRMANBURG \$12.65</p>	<p>MICHIGAN-ONTARIO Great Lakes Area</p>  <p>MACKINAC CITY \$6.00</p>
<p>THE SOUTHEAST Paradise on wheels - The real Old South</p>  <p>ATLANTA \$10.40</p>	<p>FLORIDA At its best in Spring</p>  <p>MIAMI \$19.25</p>
<p>GREAT SMOKIES West Spring is our largest National Park</p>  <p>ASHEVILLE \$9.15</p>	<p>THE SOUTHWEST Crescent City's best to see the West</p>  <p>PHOENIX \$32.55</p>

The printed results from a mat that did not have bowl depth. There was sufficient depth in spaces; but owing to molding combination used, the type was too shallow for reproduction purposes.

begop

Areas indicated by (X) are examples of those portions of type face construction known as "bowls." The "bowl" is the most shallow part of the letter and fills in very quickly when loss of depth occurs.

Select a type face with large "bowls" to avoid this fill-in; and in the case of patterns, make sure the original "bowl" depth has been retained.



Hard to Shave?
Man, You'll Rave!
your face feels fine
when you
Add MANOR
to hard or soft water.

This is the result of a mat made from a shallow pattern plate. Note filling in around type and illustration at top of advertisement.



Now!

**(54 Fun-filled tours)
ranging from
3 to 27 days, include:**

- Atlantic Seacoast • New York, Washington • Mississippi River Cruises
- New England and Canada • Michigan Dude Ranches • Great Lakes Cruises • Blue Ridge Mountains • Western Parks • Colonial Williamsburg, Va.

What a wonderful ideal Go over every step of your vacation before you even start to pack your suitcase!

Where to? The seashore? The mountains? The excitement of a great metropolis or the quiet beauty of America's historic shrines? Whichever you want . . . they're all here! You have your choice of 54 wonderful tours!

It's carefree fun from start to finish . . . no worries of any sort; your FREE copy of Handy Vacations and Tours tells you all about hotel reservations, meals on the trains, sightseeing trips, entertainment . . . it describes the popular escorted tours and the equally popular individual package vacation.

This is printed result where mat was made from shallow engraving. Note shoulders around type and hair line around side of illustration.

You'll love the rich appearance, the smart velvet-sheen finish, one of which will give your walls. You'll be thrilled with the ease with which it goes on . . . the way it covers old finishes such as all types of paper and bare plaster completely and beautifully with a single coat. And remember, it is washable! That's because it's a real oil flat, used and recommended by professional everywhere.*

is low in cost, easy to apply, long lasting, rich looking. It dries in 2 hours. Comes in a wide range of smart new colors. Ask your dealer to use it in your home. Your dealer will be glad to give you helpful advice and suggestions.*

The printed results when engraved type was used to make mats for newspaper use. Note printed shoulders and filling-in in the spaces.

