How To Become

AN ALL-ROUND PRINTER

The Kelsey Course of Printing Lessons Written So You Can Understand Them

Including the Complete
PRINTER'S DICTIONARY

THE form of this printing course and the information in it are the result of over seventy-five years' experience. During that whole period we have been supplying not only printing equipment, but detailed printing instruction books and guides which have enabled beginners to use it satisfactorily. We have received and answered thousands of letters on printing questions from press users, and these, also, have contributed to our understanding of what the new printer needs to know, as well as what his problems are. Each one of the lessons includes an instalment of Printer's Dictionary.

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Learning to be

AN ALL-ROUND PRINTER

How This Course is Planned for You

You may or may not have a printing press. If you haven't, we suggest the practice kit listed elsewhere. The kit has all workable materials, which you can use later. It will also pay for itself in the time you will save learning to be a printer.

Since learning to print consists in doing as much as in reading, it seems best to assume that you have access to at least enough equipment so that you can make printed proofs. However, even if you have not, you will be able to follow the course and to learn, just the same.

The most important and fundamental details will be covered first. We will then go back, after you are acquainted with those, and cover each subject more thoroughly. In this way the study will be easier and more interesting.

The lessons are so divided that for the most part active lessons which require "doing" are alternated with those which contain general or specific information. We believe you will find them more interesting that way.

To those of you who have been through the first stages and perhaps a little further, these first lessons will be old stuff. However, review it to see how it checks with your own experience and be patient. The things you don't know and want to learn about will come soon enough. Meanwhile the rest of the class will have a chance to find out about the things you already know.

If you are up on your terms, you will know that so-called letterpress is the only kind of printing most people hear about — that is, printing from raised letters, plates, etc., as contrasted with lithography (flat plates), steel and copper engraving (recessed plates, instead of raised — called intaglio) and offset (printing on a roller which in turn transfers to paper). The dictionary of printing terms will be carried through from lesson to lesson until it is completed. Most names and terms will be explained in the individual lessons, but you can refresh your memory from this dictionary if you forget.

But don't let the terms bother you — you'll pick those up as you go along.

The questions after each lesson have been formulated to help you find out for yourself just how much you have absorbed from it, of the kind you should know if you wish to be an all-round printer. Some of the informative material in the lessons does not appear in the questions, but we are confident that you will pay just as much

attention to it as to parts you do require for answering them. Only in that way can you consider yourself well educated in your chosen calling or avocation. Remember that you are taking up the study of printing of your own free will, and unless you get all you can from this course you are cheating yourself out of its full benefits.

You are going to learn about and explore one of the most interesting crafts in business life, one which has fascinated men since long before the day of American printers' patron saint, Benjamin Franklin.

Some Helpful Tools to Use in Studying

In printing, as in many other callings, nothing takes the place of practice. We strongly urge, therefore, that you have at least a small outfit, including a hand press, with which you can carry out the lessons. Many students in this course probably already have one.

Lacking this, we suggest that you obtain a few simple tools which will enable you to practice the fundamentals. Here is a helpful list:

A font (package) of type. A case to hold the type.
A chase (frame) for making up a printing form. If not a screw lockup, add 6 quoins and a quoin key.
Furniture (wood blocking) sufficient to hold the type in the chase.
A tube of black ink.
A hand roller (brayer).
A planer (smooth block of wood) for making a proof.
A mallet (to tap the planer).
A piece of felt (to put between the planer and the type form).
A composing stick (to set the type in).
A package of News White paper the size of the chase or larger (for proofs).
A glass, or marble slab, or smooth piece of metal (for working up the ink).
A pound of leads and a pound of slugs (these go between the lines of type).
A strip of rule (for frames, underlining, etc.).
A line gauge.

The type can be of any style which suits your fancy, but we recommend to begin with that you have a style good for cards, letterheads and such work, or a plain roman face such as these words are set in.

The case can be a small square, 12½ x 12½, as a space saver, or better yet, a standard 16 x 21 (called two-thirds by printers) or the same in the so-called full size, 16 x 32. These last two will have the regular printer's arrangement, which will enable you to "learn the case." The small square case would have a strictly alphabetical layout.

The chase is a frame in which type is put in the press. Screw chases have screws along the edge which are tightened to hold the type forms. Plain chases without screws use wedges called quoins, with a "key" to "lock" or "unlock" the wedges. Quoins and key can be used in screw chases, too, and you may find it worth while to eventually get them for practice, big presses in most cases requiring them.

A type form for printing can be made up in a shallow tray called a galley instead of a chase, then tied up with string and printed impression taken. The practice of locking up the form is lost, however, if a galley is used instead of a chase.

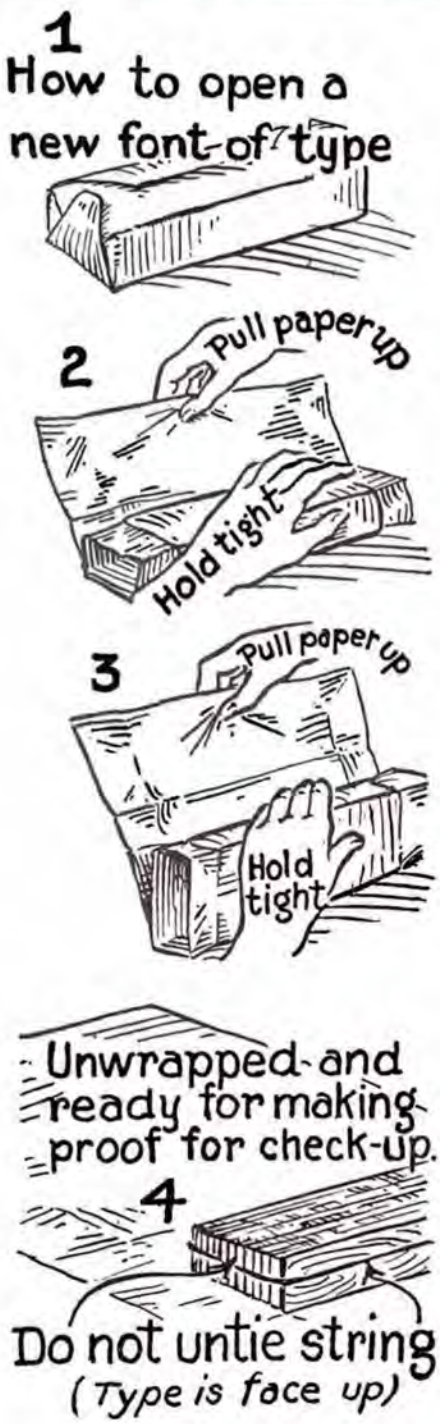
Kelsey has inexpensive sets of furniture (wood blocking) made up to fill the respective sizes of chase. However, if desired, furniture may be bought in other forms, including yard lengths, and cut up as needed.

Unless you have home workshop equipment for making and testing a wood block for flatness, we recommend buying your hardwood planer. Any wood mallet, of course, will do. Don't use a carpenter's or other metal hammer — the possibility of damaging your type or other accessories is too great. The piece of felt should be of uniform thickness, and if you wish you can tack it over the bottom of your planer. Tacks should not be on the bottom, but on the sides or top. You can buy a felt bottom proof planer if you prefer.

Leads and slugs are metal strips which come in two foot lengths, but these may be purchased in labor saving fonts or assortments of standard cut sizes. If bought in strips they may be cut up with tin shears, or filed apart. They can be cut with scissors or ordinary shears, too, if you aren't fussy about the condition of the shears or scissors later. You'll hear about lead cutters made for the job later. Metal rule likewise comes in two foot strips, and can be cut the same way.

The line gauge is the printer's ruler, which has inches on one side, but on the other has measurements in picas and half picas (printers' measurement) with a projection at one end to make accurate use easy.

The Kelsey Printing Course will all be issued on sheets 5½ x 8½ punched to fit standard loose leaf binders. You can obtain the right size binder at any stationery and most variety stores. Keep all your lessons and information sheets in the binder, for quick and ready reference. Cut the sheets apart before inserting in the binder.



LESSON ONE

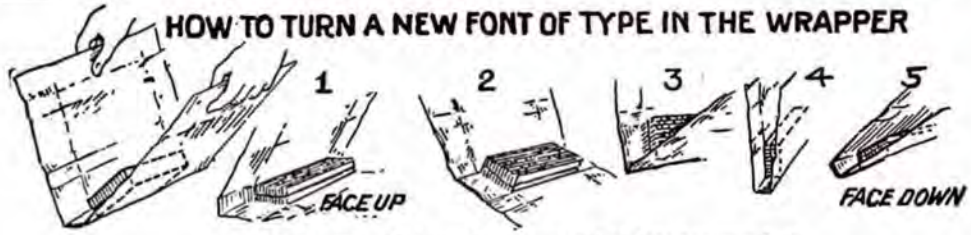
How To Open and Put Away A Package of Type

The suggested practice kit has a font of type and a type case, so you will want to know how to handle it without mishap. If your type is wrapped in a cardboard container, place it, label down, tear off the sealing tape and unhook the cardboard ends. Unfold the cardboard, and the type will be face up. If the type is wrapped in paper, lay the package down and unroll toward you, very carefully, so that the type will be face up when entirely opened. Do not try to remove it, but place a block of wood or something similar on each side, to keep it from falling over.

Before going any further, take a printed proof, so that you will have a check, both on the type foundry and yourself. If there is an error, the foundry requires a proof. If later you seem to be short any letter, you can go back to the proof for verification.

How To Take A Proof

The illustration here appended makes any detailed description of proof-taking unnecessary at this point. If you have purchased the practice kit you will have a chance to use your mallet, planer, felt, ink and roller right now. The method of taking the proof is the same as you will use when print-



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HOW TO MAKE A PROOF

or if you haven't a galley push the type (still tied up) onto a heavy cardboard, wood or other smooth surface.

If you have no hand roller (broyer) use a press roller

Use the ink plate of your press if you wish.

Carefully lay sheet on type - place over this a felt pad, a blotter or soft paper. With planer laid on pad or paper (over type) - strike squarely with mallet.

or use a smooth block of wood if you have no planer.

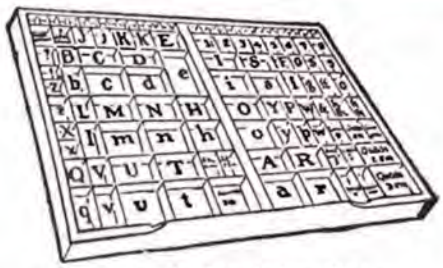
ing up practice type forms, unless you have a press for that purpose.

How To Put the Type In the Case

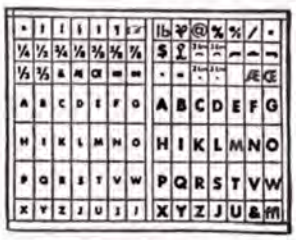
After taking your proof, wipe off the face of the type with a little cleaning solution (gasoline, benzine, Print-O-Clene, or some other quickly evaporating hydrocarbon) and, after placing strips of wood on each side of the font to keep it straight, carefully remove the string. Look out for b, d, p, q, n and u; type is reversed from the printed impression it makes. Remember, too, that the nick is at the bottom of the letter. This will help to keep each in the right compartment.

If your practice kit has a small square case, you'll probably find it best to place the letters in alphabetical order, although it is customary to use the first two rows of compartments for figures, dollar and & (ampersand) signs, with the points (periods, commas, etc.) trailing after Z in the bottom row.

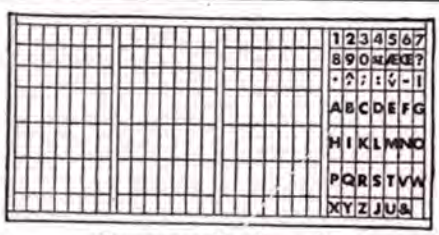
Illustrated here are several other styles of cases. These all take into consideration the frequency of letter use, the bigger compartments being in the middle for easy accessibility, with one exception. Cap cases, made so that two sizes or styles of capital letters may be placed side by side, are, as you will see, arranged in alpha-



Improved Excelsior Case

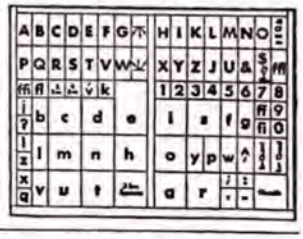


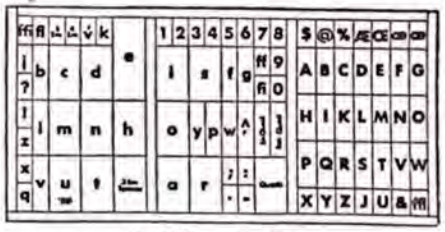
Cap Case
⅔ size



Quadruple Cap Case

California Case
⅔ size

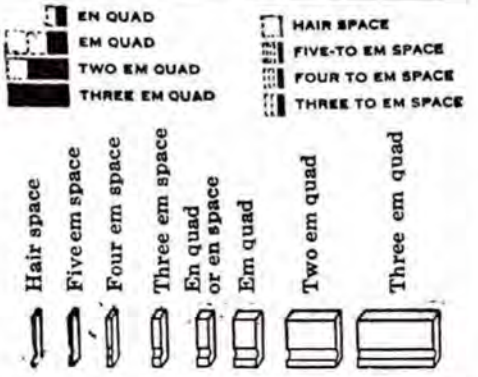




California Case

betical order except J and U, which are comparatively recent additions to our alphabet (being variations on I and V, respectively). Similar cases made to hold three and four fonts, are known as triple cases and quadruple cases, respectively.

Spaces and quads (for use between words and sentences) are in a separate package. The em quad is square, the en quad or space just half the em quad



thickness, the 3-, 4- and 5-em spaces are those which are respectively one-third, one-fourth and one-fifth the thickness of the em. You can see this in the diagram.

How To Set Type

Start with something small and simple, such as a card with one or two short lines of type. Use your own name and address, but follow the card illustrated here; or some similar layout. This particular card is set in two sizes of Copperplate Gothic, but you can use whatever style of type you have.

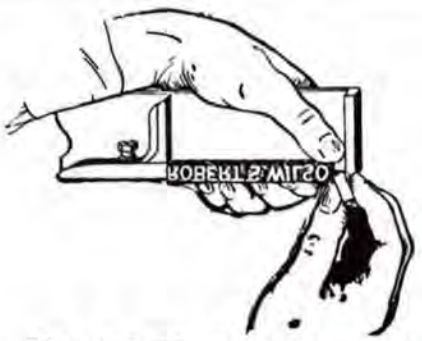
As in typewriting, the printer makes all his lines on the card just as long as the longest he is going to need. The longest stretch on the card is from the 6 of 61 to the 0 of 3810. If you are using the same dimensions as on the card illustrated, you'll find it to be three inches, which in printers' measurement is 18 picas, there being six picas to the inch. If you have the line gauge listed in the kit you can check. The furniture assortment also mentioned in the kit probably contains one or more pieces 18 picas long, which you can use in this setup.

If you have a composing stick, set the movable part (called the knee) so that it will hold a three inch line, using a piece of wood furniture that length to get the right measurement, but allowing a trifle more — the thickness of a heavy cardboard, or a 72nd of an

This is the card we describe → see Page 2 Lesson 3. You can follow it—using your own style for name and address.

WILLIAM J. HARRISON
INSURANCE

61 WORTH STREET TELEPHONE 3810



How to hold a composing stick

inch (one point in printers' language). Even better and more accurate for the purpose is the metal furniture. The extra point in width is provided so that when you tighten up your finished form the squeeze will come on the type and not on the furniture.

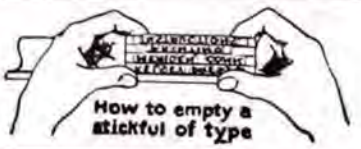
For spacing between the lines you will need something thinner than the wood furniture or reglet (furniture 18 points or thinner is called reglet). This is the function of the two point leads. Leads are also made in one point thickness. When they are six points thick they bear the name of slugs. Anyway, you have your choice of leads, slugs, reglet and furniture for spacing out between the lines. Lacking a lead cutter, tin snips or scissors will reduce leads to the required length. A fine-tooth saw will cut furniture or reglet. Be careful to make them all the same length, allowing for the cut of the saw if you use one.

Hold the composing stick as the picture shows, in the left hand, with the open side away from you. Put a three inch piece of lead or reglet in it, then with your right hand, pick up the first letter. Place it face up, and with the nick *away* from you, in the lower left hand corner of the stick, holding it in position with your thumb. Proceed with the rest of the name.

The student without a composing stick can use the chase, galley, or whatever he has which he thinks will enable him to follow the lesson.

What you have set will probably not fill the three inch space, so place an equal number of quads (thick spaces, see diagram) before and after the line. See that the wording is exactly in the middle, and get the line the right degree of tightness by using spaces, thin and thick according to need. If set in a composing stick the line should be just tight enough so that if lifted a little it will stay there without sliding back, but not so tight that it is hard to shove spaces in.

Having set the first word, put a three or four em space after the last letter. Set the next word or initial, insert a space, and so on. Some printers set a line of words with no spacing between them and when the end of the line is reached leave sufficient space so that they can go back and put in the spaces. This they feel saves the necessity of changing the spacing between



How to empty a stickful of type

the words after a line is set.

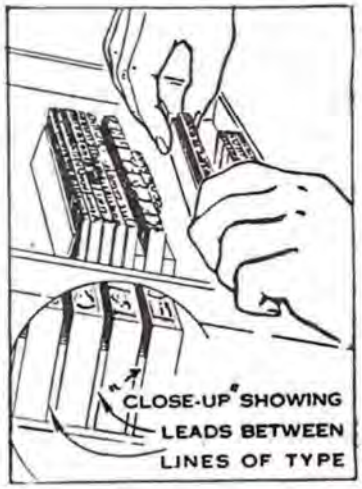
The first line being finished, put in another lead and set your next one, and so on, until you have your type form completed.

If you have been using a composing stick, this is the way to pick up your type form: Put another three inch piece of wood reglet or lead at the bottom; perhaps several if you have room, so as to give you something to hold on to. Next, do as the picture

shows — grasp the type form, with bottom away from you, and with your inside fingers pressing against the edges. Squeeze tightly on ALL sides. Lift carefully from the composing stick and place in the chase, or galley if you are using that for proof taking.

When the form is in the galley or chase, and a correction has to be made, lift the line to be corrected back into the composing stick, and make it there. Only in that way can you be sure that the line will be properly spaced after the correction.

This may sound as if using a composing stick were more difficult than setting type in the chase



or galley in the first place, but there are important advantages. Stick setting is easier and quicker; you can be sure all lines are "justified" — spaced out to equal tightness — which prevents drop-outs from the chase, as well as such catastrophes as a form piing — falling apart.

You are now ready to take a proof of your work.

Lesson One—Questions

1. *Describe the proper way to open a font of type when it comes*
   a. *In cardboard container*
   b. *Wrapped in paper*
2. *Tell how you would take a proof with what equipment you own, or if you have none, how you would take it with a hand roller and galley.*
3. *How do you set your composing stick for any given length of line?*
4. *How tight should a line of type be fitted (justified) in the composing stick?*
5. *Describe the proper way to remove the type from the composing stick.*

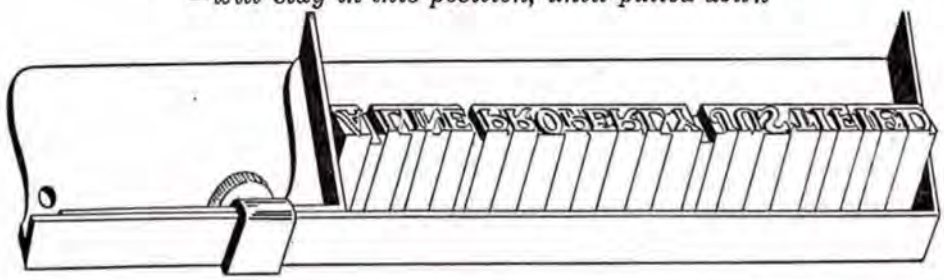
The Printer's DICTIONARY

"A"

Accent—A mark over a letter to show on which syllable the accent falls, or in foreign type a mark over the letter to show how the letter is pronounced. Accents

ACCENTED LETTERS ÃÑŢÚäíùö
PIECE ACCENTS ~ ° ^ ´ ••

A line properly justified in the composing stick —will stay in this position, until pulled down



are furnished separately from type, so that they may be placed over letters, in which case they are called piece accents, but the most popular form are letters with the accent cast over the top of them in one piece. Some styles of type have a wide variety of accented letters available—Continental Series and Century Roman are almost complete for every language using our alphabet. Others have a varying number. Those who wish to print foreign languages can obtain information and accents from The Kelsey Company.

Addendum — Material to be added, very often matter not ready when a book is made up, consequently placed in the front or the back of the finished job.

Advance Copy—Copy of book or periodical furnished to reviewers, advertisers or others in advance of regular day of publication.

Agate Line—Originally used as the name of a size of type in the days before the point system came into use, it is now the common measure of advertising space in magazines and newspapers. There are 14 agate lines in an inch. When you see advertising space priced at so much per line, you will know that they refer to agate lines. Naturally that does not restrict you to lines of that size—it is only a way of measuring and charging for the space used.

5 point type like this is within
3 per cent of the old agate size.

Albertype — A print from a photo-gelatine plate, similar to a collotype and related to gravure (both to be explained later).

Alignment—If the bottom of all letters are on an even imaginary line, they are in correct alignment. This excepts, of course, lower case letters like y, p, and others with normal "descenders."

Alloys—A combination of metals. Type metal is an alloy, largely of antimony, lead and tin, with various substances added by different manufacturers to give it greater wearing qualities.

Ampersand—The character used in place of the word "and"—(&).

Angle Lockup—Form locked in chase at an angle for ease of feeding, ink distribution or otherwise.

Antimony—One of the constituent metals in type, used largely because it helps to make the type hard and long wearing.

Antique—Type with a face similar to Bookman (including Bookman itself), that is, a roman with no hairlines and with serifs. Many of the newest faces are "antique" style such as Egyptian Bold, etc.

Egyptian Bold—This is antique type
Bookman—This also is antique type 408

Also used for describing eggshell finished book cover papers.

Appendix—Material placed in the back of the book, helping to explain or amplify the text.

Aquatone—Another photo-gelatine process used for illustrating, particularly in reproducing paintings and other works of art.

Ascenders—That part of a lower case letter which lies above the common height of the letter. These letters have ascenders — l, b, d. These letters do not—e, a, o, etc.

Asterisk—A reference mark (*) used to call attention to a footnote or reference at the bottom of the page. Furnished in fonts of auxiliary characters, or separately at the extra letter price.

Auxiliary characters — Type characters which are not needed often enough in regular work so that it is worth while to have them

AUXILIARY CHARACTERS

~~ ⌐ ¬ @ ℔ ℔ ¢ % † § ‡ *

in every font. They are usually put up in separate fonts, and one style is used with all kinds of type of the same point. We show here auxiliary characters which are most commonly in demand, and are therefore included in most fonts.

"B"

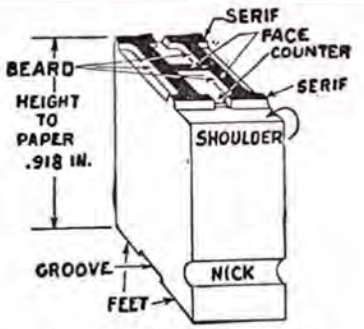
Back up—To print the reverse side of a sheet already printed on one side.

Balance — Proper arrangement of copy or type matter for good appearance.

Bales—Clamps on platen to hold tympan in place.

Bank—Frame or rack with sloping top on which are placed galleys of type matter or forms. A blank case on an ordinary case stand can be used, although it is preferable to have no ends so that galleys may be slid on and off easily.

Base — The mounting for a printing plate at type height.



Parts of printing type

Basis of Weight—Terms used to indicate how heavy a ream of paper, 1000 sheets — or a single sheet—of a given kind of paper may be. For instance, it is customary, on bond paper, to give the weight in terms of sheets 17 x 22 inches in size, and up to recently, the weight was given on 500 sheets, altho a determined effort is being made in some quarters to give the weights based on 1000 sheets. For instance, the weight of Commercial-16 Bond is 16 pounds to 500 sheets 17 x 22 inches in size, hence under the old scheme it was called 16 pound paper, and under the new, 32 pound. Commercial-20 and some of the other bonds are 20 pound papers, or under the new way, 40 pound—1000 sheets weighing 40 pounds. Hammermill-24 Bond is 24 pound, ream basis, 48 pound, 1000 sheet basis. Book papers use as a basis 25 x 38 inch sheets. Thus, if book paper is described as 60 pound or No. 120 basis, it weighs 60 pounds to 500 25 x 38 sheets, or 120 pounds to 1000 sheets of the same size. The base size of bristol board is 22½ x 35, cover papers 20 x 26 inches. The full sheet sizes made and sold are not limited to these base sizes, but as there must be some commonly accepted basis of measure, these are the ones used.

Batter — Damage to type or printing plate which makes portions lower than type high and consequently prevents satisfactory printing.

Beard—The slope of a piece of type between the face and the shoulder.

Bearers — Often called roller supporters; used in the chase on each side of the type form to give the rollers a bearing surface in addition to the tracks on the chase bed. Made of wood or of metal. Those sold are made of metal cut

in the shape of an L, so that one half will go into the chase, and the other will overhang the edge of the chase near the roller track or ways, thus taking up less room in the chase than the thicker wooden variety. Bearers often prevent sliding of the rollers, particularly on small jobs.

Shading by Ben Day screen

Bed — The chase bed, the flat surface on which the chase and type form rests when it is in the press, ready to operate.

Bellows—Used for blowing dust out of cases, etc.

Belly — When a type form bulges out in the locking, it bellys.

Ben Day — A process of screen work used in cut-making, for shading, etc., much used in newspaper advertising work, and newspaper cut-making. For instance, if Mutt or Jeff are wearing pants with a herring-bone weave in them, the odds are overwhelming that they got them from the engraver, not from the artist, altho the latter probably indicated that they should be supplied with that particular cloth in their trousers. There are a large variety of Ben Day screens. The process is named after the inventor.

Benzine Can—The common term given to the cleaning can when it contains a hydro-carbon cleaner like benzine, gasoline, benzol, kerosene, etc. Most so-called benzine cans nowadays are of the safety type.

Billhead — A printed form on which invoices and bills are made out. The kind listed in the Kelsey catalog have light grey ruling except in the place for the heading. Many people use the regular cut sizes of bond paper, with printed headings, and ruling either printed at the same time or left off entirely, in these days of typewriters and billing machines.

Bimonthly—Magazine or other periodical issued every two months.

Binder — A machine used for stapling or binding sheets together, such as books, pamphlets, publications, etc. See the Kelsey catalog for an example of such binding.

Biweekly—Newspaper or magazine or other periodical issued once in two weeks.

Benzine can

Black Letter — another name for bold or heavy face type, such as Poster Black. Originally applied

POSTER Heavy Old Eng.

to text type, particularly early German and English. (Old English.)

Blanket—A piece of rubber surfaced fabric or felt used under the tympan sheet on heavy forms by some printers when ordinary packing does not suffice or where type is too worn to otherwise produce good results. Also used on cylinder presses.

(To be continued)

LESSON TWO

Printing Terms and Names

As befits an old and honorable vocation, printing has acquired, over the past four hundred years, names for various tools of the trade which reflect its history. Printing is also an up-and-coming business, with many changes during the past few years, so in addition to the old names, there are new ones for recent accessions to the printer's equipment. Perhaps many of them are familiar to you already, but a review will not hurt.

Measurement By "Points"

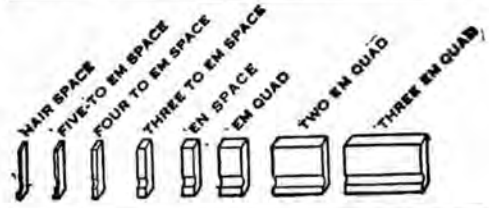
Type is manufactured on the point system, which was adopted by the majority of type founders in 1887, after many years of argument, and much confusion. Previous to that, type sizes were named, but unfortunately the name size of one founder was often different than another's. If a printer bought pica size type from a type founder, he could not be sure that it would match what he already had on hand. Obviously this was a serious condition, but the high cost of changeover for the type foundries prevented action. Finally, in 1878, one foundry burned down, and its owners took the opportunity of beginning anew on the point system. Within ten years the rest followed suit.

In the point system of measurement the inch is equal to roughly 72 points. Actually 72 points equal .99648 of an inch, but for all practical purposes we can consider them equal to the full inch. Twelve points equal one pica. Half a pica, or six points, is a nonpareil, but that is not so important as the point-pica relationship.

Standards in other countries do not entirely follow ours, but we need not consider them here. American type is .918 of an inch high, which is likewise different than many foreign standards.

Measurement By "Ems"

Equal to the point measurement in importance is the way widths of type are calculated. They are based on the em, or square. A six point piece of type an em wide is actually six points wide, the eight point is eight points wide. The em, therefore, varies with the size of the type. Half a square, or half an em is called an en. Spaces which are one-third the width of an em are called 3-em spaces (really they are 3-to-em) and a quad three ems wide is known as a 3-em quad. Thus the scale works two ways from the 1-em quad; wider, 2-em, 3-em, narrower, en quad (½-em), 3-em space, 4-em space, 5-em space. The thinnest



space, the hair, is not exactly divisible in the em, but varies between one and two points, depending on the size of the type. As a matter of fact the bigger ones are actually cast to the nearest width in points or some easily divisible size thereof. Since letters are likewise point set (as it is called) the spacing of lines is greatly simplified over what it would be if the older, strict division of the em were used, regardless of point measurement.

For example, take 8 point. Four em spaces are cast 2 points thick,

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3-em spaces three points, and en spaces 4 points. All figures in most styles of type are cast en-quad, or (in 8 point, for instance) four points thick, so that columns of figures can be easily set and corrections made without respacing.

While strictly speaking a printer probably should say a given column is 12 picas (2 inches) wide, he will usually call it 12 ems — that is, 12 pica ems. If not otherwise noted, a width or length in ems is equivalent to the same number of picas. The pica and pica em is the only survivor of the old days when names were used for type sizes. Old timers call 6 points a nonpareil, but that custom is gradually dying out.

Point and Standard Line

In the old days there was no uniform position on the body for the face of the type. As a result no two styles of type could be used in the same line without being in a ragged up-and-down formation, unless cardboard, paper or leads were used at top and bottom to jockey them into line. This was eventually cured by placing the face in a standard position on the body, so that all type of a given class and size will line together. The largest part was put on what is called Common Line. Type having caps only — no lower case — could be put on a lower line, as it did not have to allow for letters like y, g, etc. Type like Copperplate Gothic is cast on what is called Title Line, which gives the opportunity of getting bigger letters on the body. On the other hand there are some faces, like the scripts which have such long loops or descenders that they must be put higher on the body, and these use Art Line. Common Line, Title Line, Art Line, and one other, which provides for even longer descenders — Ultra Line — are called Standard Lines.

Type is further made workable together by so casting the different point sizes that you can, if you wish, use for example, six and eight point together or any other combination with spacing materials of point dimensions. This is point line.

To Sum Up

If you keep in mind that for all practical purposes there are 72 points or 6 picas in an inch, and that an em is the square of the size type you are working with, you'll have the basic printer's measurements in hand, and be able to understand catalog and other descriptions.

The Spacing Materials A Printer Uses

Type, cuts and other devices for making printed impressions must be kept in their proper places, not only in the printing frame or chase, but in relation to each other. For this the printer has a variety of articles.

First he has spaces and quads, which, if the printing art were not slightly encrusted with names for things dating back hundreds of years, would probably be called just spaces. When they are thin, such as are used between words, they are called spaces. If they are bigger, such as used at the end of sentences, they are called quads. Their various sizes will be found under "Measurements by Ems".

The printer must be able to have a greater or lesser space between lines, and for this he has leads and slugs made of metal similar to that in type, but a little

softer. Once again, a slug is nothing but an overgrown lead. If it is one or two points thick it is called a lead. If it's six or more points thick, it is called a slug. Otherwise, there is no difference, and they are all used for the same purpose. Leads and slugs are made in strips 24 inches long, and come in ten pound packages. They may also be purchased cut to various lengths. The printer will find it better to purchase a lead cutter, so that he can buy them in the standard 24 inch lengths and cut to size as desired. For use, see *"How to Set Type"* in Lesson One.

For filling spaces greater than six points, and for use around the whole form — on all four sides — there is wood reglet and furniture. As with spaces, quads, leads, slugs, the difference between the two is of size. Those below two picas in width are called reglet, from the French word for rule. Two pica or larger are called furniture. Both come in yard lengths which may be sawed up into any desired size, and there are so-called labor saving assortments of various lengths and quantities.

Aside from wood furniture, there are metal quotations and metal furniture, which supplement large quads and wood furniture. Here again we have a slight distinction in names, but based on the method of manufacture rather than the size. The outside dimensions are the same, and both are more or less hollowed out in the center to save metal. Quotation style furniture, which is cast on type casting machines, is not made so big as the ordinary kind. Sizes start at 2 x 4 picas (24 x 48 points) so it is obvious that metal furniture can be used not only for filling in blank spaces in a type form, but at the ends of lines of type 24 points in size or greater, in place of quads.

Wood can shrink and swell, although printer's wood furniture is well oiled to prevent warping or changing in size as far as possible. The older it is, the more likely it is to be inaccurate. Metal furniture, either the quotation variety or the ordinary, is absolutely accurate, and stays that way.

Iron furniture is made in large sizes, and is also very accurate. It costs more than type metal furniture because it requires more finishing. So called railroad furniture is made roughly like an I-beam, and comes by weight. On the whole, however, those first described are the mainstays of the job printer.

In printing language, metal always refers to type metal or some similar alloy. If some other variety is meant, like brass or iron, it is so designated. Metal rule is a type metal variety, brass rule is never called that.

One point spacing material 24 inches long is also available in brass. For half point strips there is copper of the same dimensions except thickness. Both the brass and copper are cut up into point sizes, six point, eight point, etc., and used for thin spaces between letters and words. They are then designated as brass and copper thin spaces. Brass one point leads have one advantage over metal leads in that they are more durable, but they cost more, and in shops where much linotype or similar material is used, and thrown into the melting pot with-

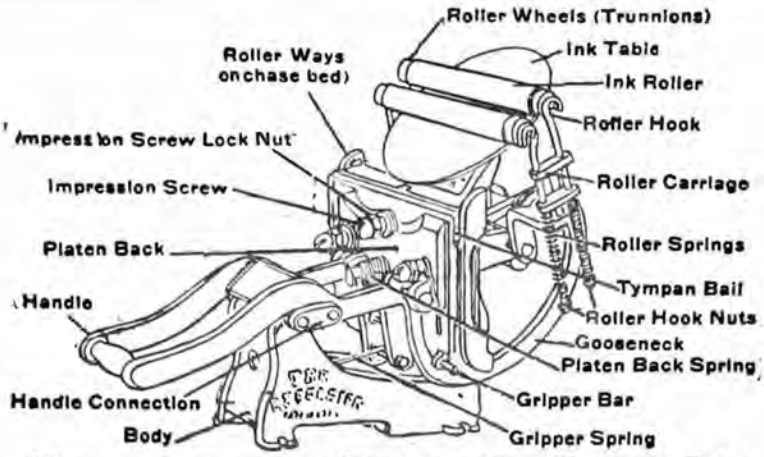


Diagram shows names of the parts of an Excelsior Press

out reuse, the type metal kind are preferred because they can be melted along with the rest of the form, eliminating the trouble of picking them out.

When a type form has a border or rule around it, corner quads are often used to bind the corners firmly together. Corner quads are

Corner Quads

ell-shaped pieces of type metal or brass, two or more points in thickness, and usually 4 picas long on each side. Mitered corners are especially helped in appearance by them, and they prevent shifting of the border or rule when the form is in the press.

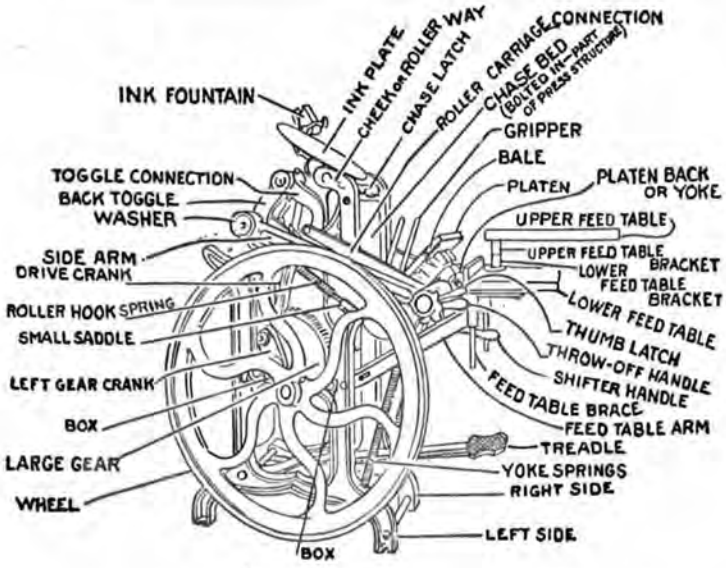
Press Parts and Their Names

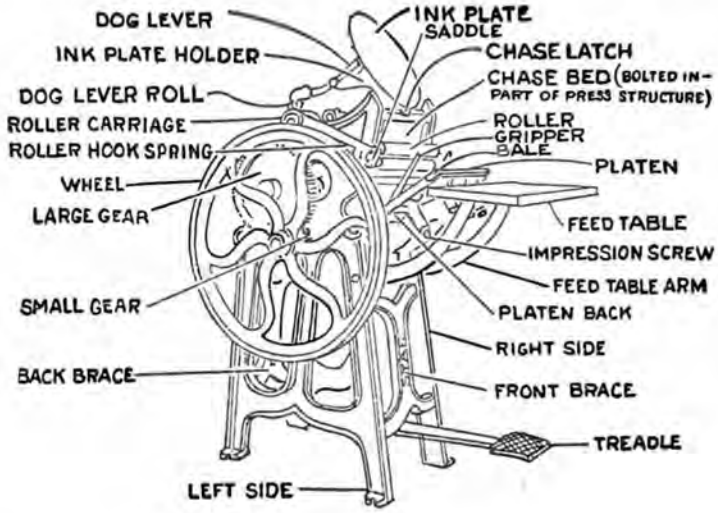
With the multiplicity of presses on the market, it is not possible to go very deeply into the names of various press parts, but contact with many printers, when they want to purchase very common replacements, indicates there is much confusion.

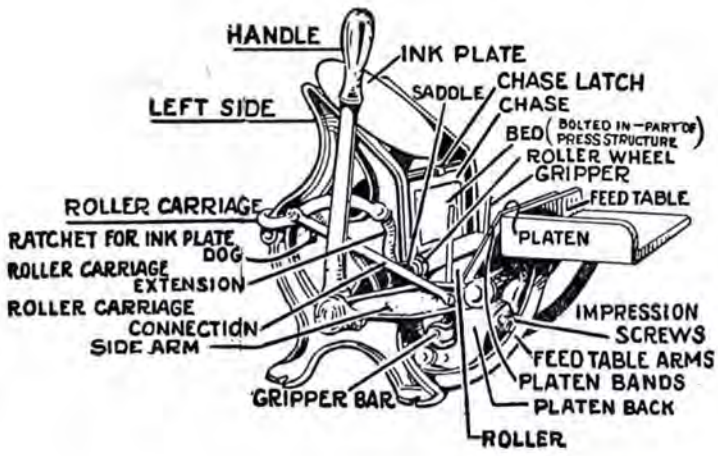
Shown here are diagrams of a hand press and a couple of simple treadle or power jobbers. While the names used by various manufacturers for similar parts is not always the same, there is enough similarity so that familiarity with one will help you in identifying parts on others.

A good example of the number of names for a single part may be found in the wheels or trunnions which are used on each end of the inking rollers. While most manufacturers either call them wheels, trunnions or trucks (this last is hardly correct descriptively), we have seen almost twenty other terms used for the same article.

Another confusing term is gripper, or gripper finger, or gripper bar. The gripper bar is the bar on which the grippers (which hold the paper to be printed) are mounted, and they are adjustable for handling large or small stock. Gripper fingers are small pieces of metal which may be placed on the grippers in various positions. If the margin on the job to be printed is insufficient for using the grippers themselves, gripper fingers can often be so mounted


INK FOUNTAIN
INK PLATE
CHEEK or ROLLER WAY
CHASE LATCH
ROLLER CARRIAGE CONNECTION
CHASE BED (BOLTED IN-PART OF PRESS STRUCTURE)
GRIPPER
BALE
PLATEN
PLATEN BACK OR YOKE
TOGGLE CONNECTION
BACK TOGGLE
WASHER
UPPER FEED TABLE
UPPER FEED TABLE BRACKET
LOWER FEED TABLE BRACKET
SIDE ARM DRIVE CRANK
ROLLER HOOK SPRING
SMALL SADDLE
LOWER FEED TABLE
THUMB LATCH
THROW-OFF HANDLE
SHIFTER HANDLE
LEFT GEAR CRANK
FEED TABLE BRACE
FEED TABLE ARM
BOX
TREADLE
LARGE GEAR
YOKE SPRINGS
RIGHT SIDE
WHEEL
LEFT SIDE
BOX


DOG LEVER
INK PLATE
SADDLE
INK PLATE HOLDER
CHASE LATCH
CHASE BED (BOLTED IN-PART OF PRESS STRUCTURE)
DOG LEVER ROLL
ROLLER CARRIAGE
ROLLER GRIPPER
ROLLER HOOK SPRING
BALE
PLATEN
WHEEL
LARGE GEAR
FEED TABLE
IMPRESSION SCREW
FEED TABLE ARM
SMALL GEAR
PLATEN BACK
RIGHT SIDE
BACK BRACE
FRONT BRACE
TREADLE
LEFT SIDE


HANDLE
INK PLATE
SADDLE
CHASE LATCH
LEFT SIDE
CHASE
BED (BOLTED IN-PART OF PRESS STRUCTURE)
ROLLER WHEEL
GRIPPER
FEED TABLE
ROLLER CARRIAGE
PLATEN
RATCHET FOR INK PLATE
DOG
ROLLER CARRIAGE EXTENSION
ROLLER CARRIAGE CONNECTION
IMPRESSION SCREWS
SIDE ARM
FEED TABLE ARMS
PLATEN BANDS
GRIPPER BAR
PLATEN BACK
ROLLER

that they hold the stock without interfering with the printing surface. In such cases the grippers themselves are set at the sides where they will carry the fingers to best advantage.

The circular plate on platen presses which carries the ink is variously known as the ink plate, ink table or ink disc. The rollers and wheels are fitted into roller hooks on some presses, on others into saddles or trucks, which move them up and down between the ink plate and the chase, which holds the form of type, etc. The hooks or saddles are carried by a roller carriage, which is actuated by toggles, gears, or various mechanisms, depending on the make and kind of press.

The chase rests against the chase bed, and is held in place by a latch. The paper or card stock which is to be printed is placed on the platen (pronounced platten), and the platen is supported by the platen back. Some presses have large bolts or screws for regulating platen pressure, impression or position, others have cams or similar devices.

The rollers travel up and down ways or tracks, which, if the rollers are cast to the proper diameter, will give the correct amount of contact between roller surface and type form. Adjustable wheels are sometimes used to compensate for shrinking or swelling of rollers. When, in spite of everything, the rollers instead of turning properly, slide or slur over the form, bearers or supporters may be locked into the chase beside and parallel to the ways. These provide bearing surface for the roller composition itself, and keep the rollers turning. On large work this is not often necessary, but when it is, or if an impression of the bearers transfers to the stock being printed, a piece of stiff paper or cardboard is glued to the grippers in such a position that it will come between the bearers and the stock.

On most treadle and power presses, a device called a throw-off is used to release the impression if the sheet is not fed straight or if it falls down out of place. Without this it would be difficult to stop the press in time to prevent paper spoilage. The throw-off usually works by cam action on the platen back, directly or indirectly, but however designed it results in keeping the platen from making contact with the type form. The throw-off lever is on the left hand side of the press, where it can be easily moved by the operator.

The tympan material (paper, pressboard, etc.) on the platen, the padding against which the sheet to be printed rests, is held in place by tympan bales — bands of metal which slip over the top and bottom edges of the platen and keep the tympan smooth and taut.

The press may or may not have an ink fountain, which acts at the top of the ink plate to provide a continuous supply of ink on long runs of good size work which would otherwise require frequent stopping of the press for re-inking.

Nowadays there are all kinds of rollers, but no matter what they may be made of, the surface they present to the ink and type form must be approximately like the ball or inside of your hand — firm, but pliable.

They should be free from pits and cuts. Care should be taken when running jobs with rule in them that they do not damage your rollers. An extra, older pair can be advantageously kept on hand for use on such jobs which are likely to damage your good ones. Most rollers of standard printer's composition will retain their condition best if kept coated with oil when not in use.

If the printer is familiar with such comparatively simple presses as these, he should be able to master more complicated machines without too much trouble, given adequate instruction material for the particular kind to be operated.

Lesson Two—Questions

1. *What is the equivalent in inches of a point? A pica?*
2. *What is an em? An en? A 3-em space?*
3. *Describe the various kinds of spacing materials you have at your disposal, if you are a printer.*
4. *What is the difference between a lead and a slug? Reglet and furniture?*
5. *What are corner quads, and what are they used for?*
6. *What is the function of the grippers? How can a sheet be held when the margins are close or non-existent?*
7. *What is the platen?*
8. *What is a throw-off?*
9. *When is an ink fountain useful?*
10. *What are the tympan bales, and what are they used for?*
11. *Describe the condition of a good roller.*

The Printer's DICTIONARY

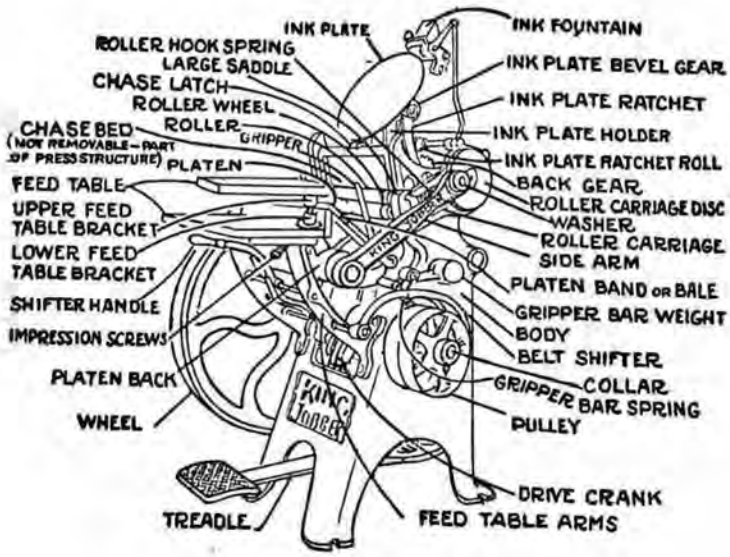
"B"

(Continued)

Blank Case — A wood case the same size and shape as a type case, but without partitions or divisions. Used for plates, electros, forms, etc.

Blank line — A line containing no printing, usually a line of quads.

Bleed—Lines which run to the edge of the paper are said to bleed.



This is often done by trimming after printing. Solid backgrounds are frequently run that way.

(To be continued)

Old Type Size Designations Before Point System Was Adopted

Brilliant	3½ Point
Diamond	4½ Point
Pearl	5 Point
Agate	5½ Point
Nonpareil	6 Point
Minion	7 Point
Brevier	8 Point
Bourgeois	9 Point
Long Primer	10 Point
Small Pica	11 Point
Pica	12 Point
Two-line Minion or English	14 Point
Three-line Pearl	15 Point
Two-line Brevier	16 Point
Great Primer	18 Point
Two-line Long Primer or Paragon	20 Point
Two-line Small Pica	22 Point
Two-line Pica	24 Point
Two-line English	28 Point
Five-line Nonpareil	30 Point
Four-line Brevier	32 Point
Two-line Great Primer	36 Point
Double Paragon	40 Point
Seven-line Nonpareil	42 Point
Four-line Small Pica or Canon	44 Point
Four-line Pica	48 Point
Nine-line Nonpareil	54 Point
Five-line Pica	60 Point
Six-line Pica	72 Point

Note that nonpareil is still used for some 6 point designations, also pica for 12 point.

The agate line, 5½ points, comes from the term for that size, agate, and is used in figuring the advertising in magazines and newspapers. Thus, when an advertiser speaks of using 7 lines, he doesn't mean seven type lines, necessarily, he means half an inch of space.

Number of Leads to a Pound

The following table gives the approximate number of leads of a given size, per pound. It will be handy if you need a large quantity of one size, and wish to order them already cut.

Length	1 point	2 point	6 point
4 pica	390	195	65
5 "	312	156	52
6 "	260	130	44
7 "	222	111	36
8 "	195	97	32
9 "	173	87	28
10 "	156	78	26
11 "	142	71	23
12 "	130	65	22
13 "	120	60	20
14 "	111	55	18
15 "	104	52	17
16 "	97	48	16
17 "	92	45	15
18 "	87	43	14
19 "	82	41	13
20 "	78	39	13
22 "	71	35	11
24 "	65	32	10
30 "	52	26	8

The table below shows the approximate number of words in a square inch of type of various sizes. It is accurate enough to be used in estimating the space any manuscirpt will fill.

Size of Type	Number of words in one square inch: Set solid	Leaded with two point leads
6 Point	47	34
8 "	32	23
10 "	21	16
12 "	14	11
14 "	11	11
18 "	7	7

Handy Estimating Table

	Size of Type, points								
	6	8	10	12	14	18	24	36	48
Weight of 1 line (36 picas long) ounces	2	2⅔	3⅓	4	4⅔	6	8	12	16
Number of lines (36 picas long) to a pound	8	6	4⅘	4	3⅓	2⅔	2	1⅓	1
Number of inches to a pound	48	36	28⅘	24	20⅓	16	12	8	6
Number of picas to a pound	288	216	172½	144	123⅗	96	72	48	36
Number of ems to a pound	576	324	207	144	106	64	36	16	9
Number of points to a pound	3456	2592	2073	1728	1486	1152	864	576	432

LESSON THREE

Locking the Form

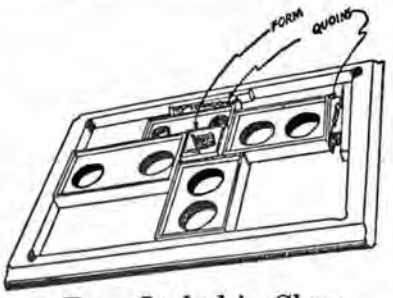
The form should be laid on the stone or imposing surface, and the chase placed around it. For best results the form should be in the middle of the chase. Second best position is centered from each end, if not exactly so between top and bottom. A low position is better than a high one in most cases. Sometimes the form must be put completely off center, but neither impression or inking is as good as it would be if properly positioned.

Be sure the stone or surface on which you lay your form for locking is absolutely clean, with no particles of dust or dirt left on it. In the same way, look out for any dirt on galleys, or on any other place where the form may be laid. Dirt specks under the type will raise individual letters, making them print darker, and subjecting the type itself to greater wear. When the form is locked up and on the press such raised spots may cause you to think makeready is necessary, whereas an uneven lock-up is the real trouble. If you are

Quoins

at all uncertain about the condition of the bottom of the form, lock it tight enough so that it will lift, then raise the chase up on edge and give the bottom a good brushing. You can then lay the form down again, loosen it up, plane and relock it.

Put furniture around the form after the manner illustrated, and place quoins or chase irons on the two sides, depending on whether quoins or chase screws are to be used. Note that the furniture is so arranged that when the form is tightened up, there is no interference with tight locking by reason of furniture from one side bumping into the other. The lapping over must allow for clear-



Form Locked in Chase

ance when the furniture squeezes up. There are other ways of placing the furniture but this is the simplest and most used method.

Turn up the quoins or screws a little at a time, so that the form is not twisted or distorted. Watch to see that there is no binding on the furniture in the way just mentioned. Do not put too much squeeze on, because the cam action of the quoins exerts a tremendous leverage, and the chase may warp or break.

Raise up one corner of the chase, and test the form for soft spots with fingers. If any are found, unlock the form and use thin spaces, cardboard or heavy paper to make them justify, then tighten the form and test it again.

Putting On the Form

As a precaution against mashing the grippers against the type form it is well to loosen and set them out to the ends of the gripper bar before putting the chase on the press.

The chase may then be grasped with both hands at its top and

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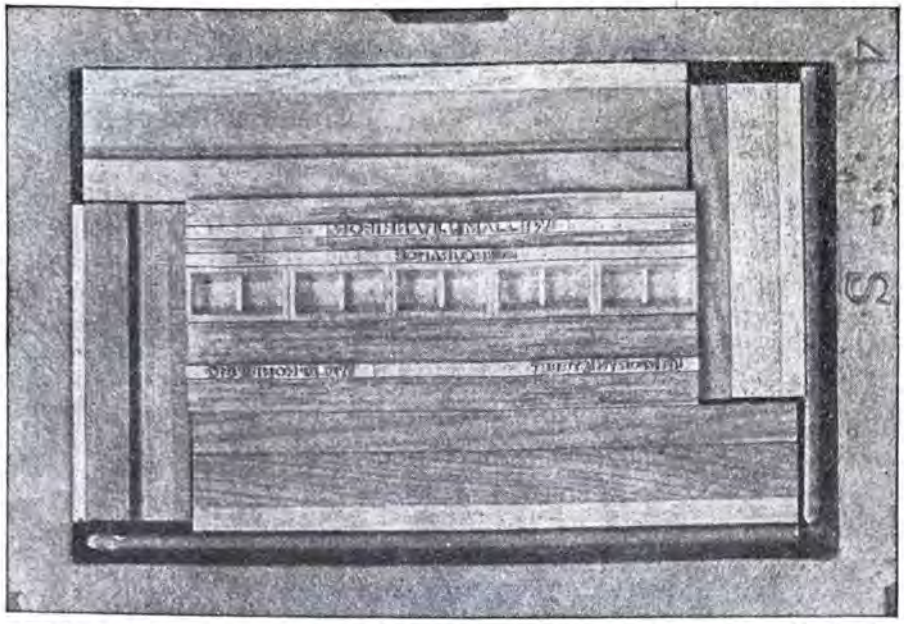
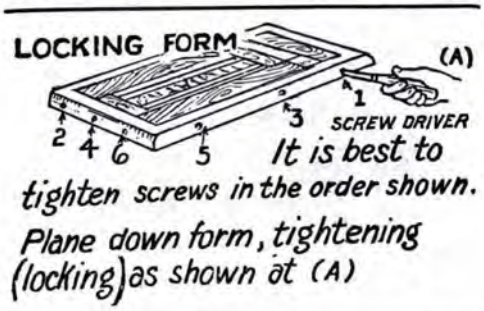


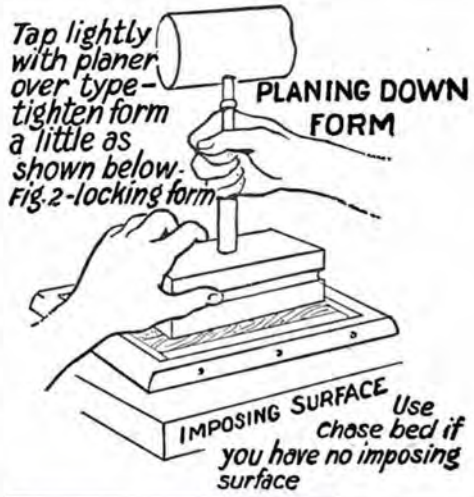
This is the way your card job will look when tightened up (locked) in a chase. Note open spaces to prevent tightening of one side from interfering with tightening of other side.

placed in the press, taking care that the face of the type is not bumped into the grippers or against any other metal object.

Setting the Gauges

Make a printed impression on the tympan, turning the flywheel over by hand rather than by power (if you are using a power press), or push the handle down slowly, so that if there is any undue impression the motion can be stopped, and the cause investigated. Take a sheet of the stock you are going to use for the job, and get the position of the side pin by holding the sheet high enough on the tympan so that the impression shows at the bottom. If you are right handed, the pin goes on the left, if left handed, place it at the right. Do not put the pins in yet; merely mark the right location. Repeat the process for marking the position of the bottom pins, but this time slide the sheet sideways enough to make the print visible on the left or right edge.





Work varies, but in general the margin at the top should be a little less than at the bottom. Good

appearance is the objective; you will soon get the hang of it.

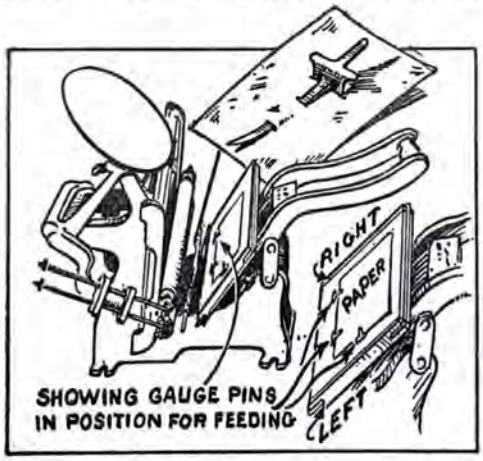
In order to set the pins in the right spot the points should be inserted in the tympan about a pica below the line at the bottom, and the same distance outside the mark on the side. Bring the point

Ordinary Steel Gauge Pin

Movable Tongue Gauge Pin

Spring Tongue Gauge Pin

out again further down, and push until the edge is on your mark, then press the teeth of the pin into the tympan just enough to hold until you can take a proof on your stock and get a final check



SHOWING GAUGE PINS IN POSITION FOR FEEDING

on the position of the pins. If all right, you can anchor them firmly. Many printers put sealing wax or gummed tape over them to keep them from moving. The impression on the tympan should be removed with cleaner before starting the run.

There are numerous other styles of gauges on the market, including some with sliding adjustment. Quads glued to the tympan are a common kind of guide. Heavy paper or cardboard guides are occasionally used in places where metal ones might interfere with the grippers.

Setting the Grippers

You are now ready to put your grippers in position. They must be clear of the form and the gauges, yet close enough to strip the printed sheet from the type. This is simple enough on most forms, but some have so little margin that ordinary use of the grippers is out of the question. In many such cases the grippers may be left on the outer ends of the gripper bar, and a string or elastic run between them.

There are also side grippers or fingers available which slide up and down on the press grippers, and which may be fitted in around open parts of the form. Extreme care must be taken not to get them wrongly located, or there will be mashed type with the first impression.

Gripper fingers shown left and right are special fingers to hold paper where there is no margin.

Substitutes For Gauge Pins And How To Use Them

On many jobs quads for gauges have some advantages over pins. They do not slip, but as no adhesive has been found that will hold them to the tympan indefinitely, they may drop off. Quads are best

fastened to the tympan with liquid glue. To insure replacing them in the exact position should they be dislodged, a strip of thick cardboard may be glued to the tympan with its edge firmly against the lower edge of the card. The cardboard is not apt to come loose and insures resetting the quad in exact register.

To prevent sheets working under the quad, make a V-shaped cut just above the quad through the top sheet, fold back the V-shaped tab and glue a bit of cardboard on the second sheet, its lower edge against the quad. Fold the V-tab down again and glue it down smooth. Care must be used that this last piece of card comes in the margin of the blank space in the form.

To prevent sheets riding over the quad, glue strips of cardboard, by one end, to the tympan at its inside edge of the quads, then turn up the free end to form tongues.

Register

When the stock you are going to print is bigger than your platen, you can paste a piece of cardboard on the edge of the tympan, projecting it out as far as necessary so that a gauge pin can be put on it. If you are habitually running oversize work you may find it worthwhile to make a metal gauge of an L shape, which will not only gauge but give more support to a large sheet.

The position of the printing on the sheet or card often makes or breaks the appearance of the job, and a very little change will often help immensely. We have seen many so-called experienced printers who seemed weak on that point. While as a general thing the impression should be centered, it is more important that the work appear to be centered than that it actually be so. The eye plays many tricks on us, and it is sometimes necessary to throw the impression a little one way or the other to compensate for optical illusion. This is particularly true in present day printing, which in many cases "bleeds" (runs off one or more edges of the paper). Such printing cannot be centered in the old sense of the word.

Usually the bottom margin can advantageously be a little wider than the top. If any margin is to be smaller, when the job is a single sheet, that edge should be the top. Our eye requires a broader base than a top. (Evidence of this can be obtained by turning a letter S, with supposedly two equal loops, upside down and noting how top-heavy it appears.)

In a circular or book, the outside margin can, and very often ought to be, larger than the inside one, and the bottom should be greater than the top. The latter we have already explained, the former is probably due to the fact that we are accustomed to seeing smaller margins on the inside because of the way most books and periodicals are bound. A single sheet is something else, but even a pamphlet often looks better with the bigger outer and bottom margin.

It probably isn't necessary to remind the reader that all sheets must be very carefully fed up to the gauge pins, and doubly so if more than one color is to be printed. A slight distance off on one color may not be noticeable, but when a second or more colors are applied, the slip on the first color will probably make the sheet unusable. Moreover, two colors

run at about the same accuracy will mean twice as many poor sheets, and each added color will mean more spoilage, so accurate feeding to the gauge pins is very essential if a large number of extra sheets are not provided.

Accuracy of register and proper margins will make a great difference in the final appearance of your printing. Care with both will help to convince people that you can be trusted with their best work.

Setting Your Gauge Pins Without a Lot of Changes

Many printers, when they want to set the gauge pins in the tympan for a job, take a squint, make a stab, and put them in by guesswork, which means that they may have to be shifted several times before the right spot is located. By that time the tympan sheet is pretty well chewed up, and it is not only difficult to get the gauge pins in right, but even more so to make them stick there when you are running the job.

Such guesswork can largely be eliminated. First, take an impression on the tympan sheet, then put a sheet of the stock to be printed on the tympan, with one edge of the sheet exactly lined up with one edge of the printed impression on the tympan sheet. If you will fold back the other edge until that one lines up with the other edge of the printed impression (that is, the edge itself, NOT the folded edge) and crease it, the margin for each side of the sheet is the space between the fold and the edge of the paper. Now lay the sheet with the folded edge on the exact line of the impression, and open up the fold, laying the edge out flat. The sheet edge will then be on the point at which you will want your gauge pin.

As described, this is for the side pin, but the same method may be used for the bottom one as well.

Readers have also asked how to get the exact center of the platen, for use in laying out a crooked or irregular shaped form. This may easily be ascertained by drawing a diagonal line from the right upper corner of the tympan to the left lower corner, and another from the left upper to the right lower, being very careful to use the exact corners. The point at which the lines cross each other will be the center of the platen. Take a proof of the job to be run on any kind of paper or card, cut it out, and mount it on the stock on which you are going to print the job, in the exact location or position which it ought to occupy. Take another proof on the tympan sheet on which you have drawn the two diagonal lines. If you will draw similar lines on your pasted up proof, bisecting the proof at the same points as the lines bisect the proof on the tympan sheet, you will be able to lay the pasted up proof on the platen, spot the exact center (or point where the lines cross) on both sheets, line up the outer ends of the diagonal lines, and your pasted sheet will be in correct position so that you can set your gauge pins by it.

You will probably not have anything which will require the second method very often, but if you do, you will want to go about it so as to use a minimum amount of time.

Lesson Three—Questions

1. *What is the best position for the form in the chase?*
2. *Describe the arrangement of the furniture and quoins which will assure an even pressure on all sides.*
3. *How do you check and correct soft spots in the form?*
4. *What should be guarded against with grippers and gauges?*
5. *Tell how you set the grippers and gauges.*

The Printer's DICTIONARY

"B"

(Continued)

Block—The base on which cuts, electros, plates, etc., are mounted.

Block Letter—Gothic type.

BLOCK LETTER TYPE

Block Printing—Printing from wood or linoleum blocks.

Linoleum Block Cut

Bodkin — A sharp pointed instrument, much like an awl, used for pushing down characters in a form, and in various other ways.

Bodoni, Giambatista—A printer of Milan, Italy, born 1740, died 1813, the designer of the first modern Roman style of type, after which several present day faces have been named. In his day, most printers designed and cast their own type, type foundries not having come into existence except in connection with printing houses, and machines for type casting not having been invented, very little investment was necessary.

This is Bodoni type No. 86

Body—The face of a piece of type is mounted on the body, and the point size under which it is listed is always the size of the body. In many series of card and stationery types, like Copperplate Gothic, there are three or four different sizes of face on one body, so that they may be used together in the same line, without difficulty. (See Nos. 6001, 6002, 6003, 6004.)

Body matter—matter to be set in body type.

Body type—Type used for reading matter in magazines, books, circulars, etc. Six, eight and ten point are most commonly used, altho larger ones, when so set, are really body type.

Bold Face—type having a heavy face; black letter. Proof readers,

Poster Black	Old English
LPSEOiar	ATMRSrat

and those putting instructions on work to be set up, use the abbreviation b.f.

Bond paper — Hard surfaced paper used for stationery, office forms, etc. Originally bond paper was made for the purpose which its name implies, namely, bonds, and other important legal paper which required long, practically permanent life, in spite of handling, folding, etc. The original bond papers were all rags, with no wood pulp in them.

From their use for documents, bond paper began to be sold for fine personal stationery, and as the years went on, and typewriters came into use, they began to su-

persede the laid paper which the original owners of typewriters always thought was necessary. As the use of bond paper became more widespread, more and more wood pulp was introduced, until at the present day we have everything from the finest all-rag bonds down through to all-sulphite (wood pulp) papers. There is a place for

each, and the experienced printer will act accordingly.

Book paper—the name applied to papers used exclusively for printing rather than writing purposes, and for books, pamphlets, circulars, programs, etc. Their surface is not so hard as bond paper, and they are not adaptable to jobs on which writing ink is to be used. They vary greatly both in quality and price. As in the case of bond papers, each has its use.

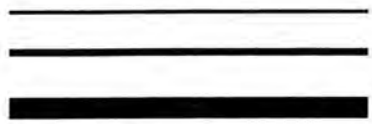
Book work — Book and pamphlet printing, as contrasted to stationery and general job printing.

Border

Border—an ornamental enclosure for a printed form. Strictly speaking, even a plain rule all around is a border, altho the term is usually applied to various ornamental type designs made especially for the purpose.

Bourgeois—The old name for nine point type.

Box—The compartments in type cases. Also used to designate a part of a job entirely surrounded with brass rule or border, which will be found a little more commonly in magazines and newspaper than general job printing. In newspapers, late news despatches are often put in a "box" on the front page.



Brass Rule

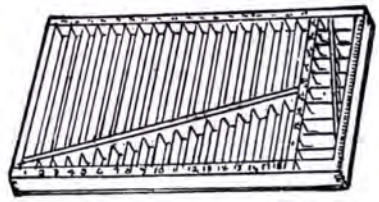
Box Head—A heading set in a rectangular, ruled off space.

Brace—a variety of bracket or parenthesis coming to a point in the center on one side, with curved ends. This is a brace: ⎩⎭. It is furnished in fonts of auxiliary characters.

Bracket — Characters used to separate a word or phrase [ ] from the rest of the text.

Brass Rule — Strips of brass, made type high, for use in making straight lines, borders, plain dashes, etc.

Brass Rule Case—A case, similar to a type case, but divided off in such a way that various lengths



A Brass Rule Case

of brass rule may be conveniently classified and put away in it. Usually the sizes are plainly marked on the edge of each compartment.

Brass Thin Spaces — Spaces of brass one point thick, and of various sizes (6, 8, 10, point, etc.) for use in justifying (spacing) out forms in places where ordinary type metal spaces are not small enough. Also made in copper ½ point thick. They are much stronger for their size than a type metal space would be.

Brayer — A hand roller (roller with handle) used to make proofs, also to smooth out ink applied to the ink plate, so that the regular

Brayer (hand roller)

rollers will not become gummed up and in turn do the same to the type in the chase. Those who have no brayer use one of the regular press rollers, taking care to smooth the ink out well before again running them over the type.

Break In—To insert cuts in text matter according to proof markings.

Break Line—A short line, such as the last line of a paragraph.

Brevier—Eight point type under the old system of names for each size.

Brilliant — Old term for 3½ point type.

Bristol Board — Cardboard of the same material all the way thru, as contrasted with board made by using a different filler. It is said that the term originally came from Bristol, England, and was applied at first to board made by pasting sheets together. Practically all business and social card work of any consequence is printed on bristol board (Medium and Heavy Fine Bristol, Linen Finish Bristol, Vellum Finish Bristol, etc.)

Broadside—A large folder or circular.

Brochure—An artistically gotten up booklet or pamphlet.

Bronzing—The use of gold or silver bronze on printing. The printing is first done with gold size, (with an ink made especially sticky,) so that after the printing is finished, and before the size is dry, it is possible to dust the work with the bronze, making the work look like gold or silver, according to the kind of bronze used. Do not confuse this kind of bronze with that used in raised printing. The two kinds are not interchangeable.

Bruce, David, Jr.—Invented the first typecasting machine in 1838.

Buckle—A wrinkle, crease or twist in paper.

Burr — A small projection of metal on any part of a piece of type or plate. Burrs may be caused by either casting, or sawing the plate in such a way that the edge is not clean cut.

Business Announcements—Bristol board cards or vellum sheets, the latter usually folded, with envelopes, used for announcements of openings, new models, etc. usually in formal language, business announcements and social (wedding engagement) announcements, invitations, etc., are all printed on the same type of stock, hence are listed together in the usual price list or catalog.

(To be continued)

LESSON FOUR

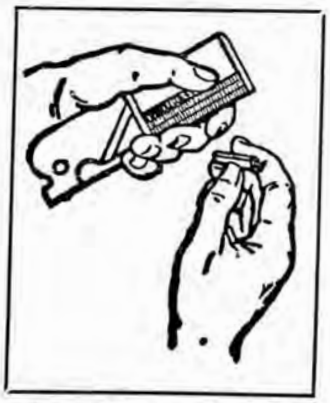
THE PRINTER'S TOOLS AND HOW THEY ARE USED

Your Composing Stick

The basic tool of the printer is his composing stick. In it he sets his lines of type, and by means of it he gets all his lines exactly the same length, so that when he makes up his printing form and puts it in the press it will hang together.

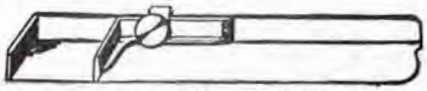
While there are a number of different kinds of sticks, both with and without marked graduations on their bed, the most important thing is to set whatever kind of stick you own accurately before you start, and not alter it or let it become changed.

The best way to get the correct setting for your composing stick



Using a Composing Stick

is to use metal furniture, or 12 point quads, both of which can be depended upon for accuracy. For example, if you want to set a width of 12 picas, take metal furniture of that width and put it in the composing stick. Add to it a single thickness of paper. Then bring the knee, or ell shaped piece of the composing stick up against the furniture plus the paper and tighten it. If you prefer, use 12 point quads — 12 picas worth, in one, two or three em widths, to which add the paper. If your stick has the graduations all marked on it, and you know them to be accurate, you will not need to do anything but set up and tighten the knee. For wide measurements you can substitute a piece of cardboard for the paper.



Excelsior Job Stick

Rouse Job Stick

Rouse Pica Stick

The stick should be held in the left hand, as shown in the illustration. For ease in setting type a composing rule may be put in the stick, which is a piece of steel, brass or other metal, type high, the same width as the matter being set, with projections or ears which hang over each end of the stick.

Sets of composing rules of various widths may be purchased, or you can make them out of brass rule yourself as the occasion arises. They make justifying or tightening lines easier, because they prevent the individual pieces of type from catching on those of the previous line. An ordinary piece of type high rule without notches will also serve for a composing rule.

The companion to the composing rule is the make-up, or hump-back

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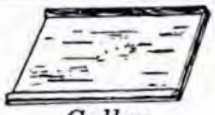
rule, which is used in making up the form. It, too, is the same width as the matter, but has no ears. Instead, it projects far enough above the type height to make possible easy grasping when making up the type form, and facilitate pushing lines backward or forward.

Instructions for setting type will be found elsewhere.

The Galley

One stickful of type very seldom makes the complete job, so it must be placed somewhere while the



Galley

rest of the type is being set. For this there are galleys; three sided trays as shown. Galleys are also useful for storing type forms for future use. They are made of steel in convenient sizes.

The Line Gauge

Since you are dealing in picas as well as inches, the ordinary ruler is not so marked as to be of much help. Consequently the printer has his own kind of ruler,

Line Gauge

which is variously called a line gauge, type gauge, line measure, pica stick. It is shaped as shown, and usually has inches on one side, picas (12 pts.) and nonpareils (6 pts.) on the other. The line gauge is handy for all sorts of work, and is, therefore, one of the printer's closest companions.

The Mallet and Two Kinds of Planers

Information on taking proofs will be found elsewhere. The tools for making them are the mallet

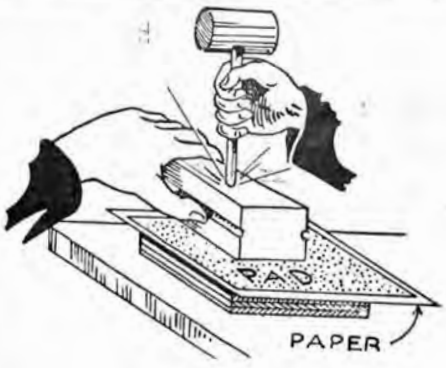
Mallet

and a planer. The ordinary planer has a smooth wood surface, and is made for lightly tapping over the type form to make sure that everything is properly levelled or planed. This same planer can be

Planer

Proof-taking Planer

used for taking proofs by laying a piece of felt over the sheet of paper which has been placed over the previously inked form. Special proof planers have felt bottoms so that they can be applied directly to the paper.

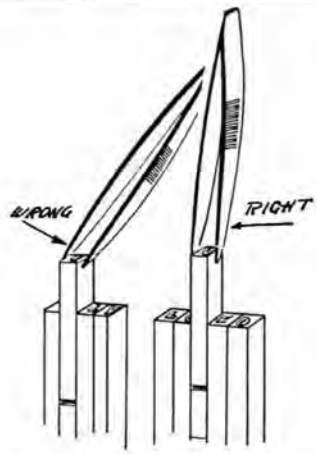


Tweezers

Tweezers are useful for drawing out letters from a form, picking up type that is down in a cramped corner, pushing down spaces, and so forth. However, they can be very destructive, because if they slip they will damage the type face.

The Bodkin

Bodkin and tweezers are usually coupled both in thought and in use. The bodkin is a sharp instrument similar to the carpenter's awl, which gets into tiny corners, shoves down protruding spaces,



SHOWING HOW TO GRAB TYPE WITH TWEEZERS. TOO CLOSE TO FACE OF TYPE IS LIKELY TO DAMAGE IT IF TWEEZERS SLIP AND SNAP OFF.

and in general serves as a tiny finger for the printer. Like the tweezer it must be used with care to prevent damaging the type face. Combination bodkins and tweezers (one on one end, the other on the other end) are available, the bodkin usually folding back when not in use.

Lead, Rule and Slug Cutters

Leads, slugs and rule all are made in two foot strips, and while it is possible to purchase them in any measure, actual practice requires that the printer have some kind of device for cutting them himself when and as needed. For this there are a variety of cutters

Lead Cutter

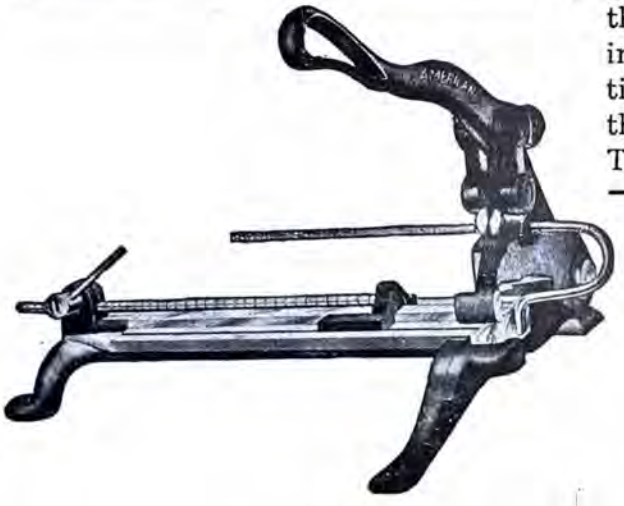
and saws, ranging from the simple lead cutter to expensive saws costing some hundreds of dollars.

More leverage is required to cut brass rule than leads, so that any cutter which will handle rule will handle leads, but not necessarily the reverse. The heavier and better the cutter, the more easily it will handle the thicker, tougher

Lead and Rule Cutter

metal. However, even the best of lead and rule cutters is likely to put a tiny burr on rule, which will require removing or straightening. Printers' metal saws will do better, but sufficient stock must be allowed when measuring lengths

for the metal ground up by the saw into dust. They are, too, much more expensive, even the cheapest being several hundred dollars. Where a large volume of work is done saws will pay for themselves, but in the average



Rouse Lead and Rule Cutter

small shop a rule and lead cutter will suffice. Leads, slugs or rules which require finishing at the ends can be taken care of with a file or a stone. Even the sawed ma-

Eveready Card and Paper Cutter

terial will be a little better if it is rubbed over a fine file, a stone, or a piece of sand or emery paper.

Don't cut steel rule on a lead and rule cutter. File it apart, or use a hacksaw. Steel rule will ruin any cutter.

If You Use Quoins

To keep your quoins in best condition, oil them occasionally. If you are using a chase or chases with very little paint on, wipe them over with an oily rag. Any iron or steel surface if exposed to the air has a tendency to rust and roughen unless it is taken care of. The various cleaners used by most printers have a tendency to cut the dirt (which is what they are intended to do), but in the operation they expose metal surfaces to the air, and rust is likely to form. Type and metal furniture (except

Bench Paper Cutter

cast iron furniture), being of non-ferrous metals, will not give any trouble in that regard, but all equipment of iron or steel should be watched and the surface protected against rust.

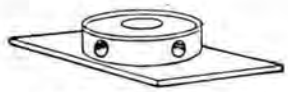
Paper Cutters

Paper cutters require little elaboration, since for the average printer the question of the correct model is more one of size. Aside from the shear type trimmers they consist of guillotine style knives which come down on the clamped block of paper or cardboard with a sidewise motion. Such cutters have very accurate gauges and will, if in good condition, do very close work. Aside

from the press itself the largest expense facing the printer is for a paper cutter. Paper supply houses will cut to order, but for cutting the edges or trimming booklets a machine on the premises is to be desired. Where color register must be maintained an inaccurate cutter can cause a lot of trouble, so the printer, if he is trying to keep down his costs, must beware of second hand machines which look all right and whose price seems low, but which are too worn to keep within close tolerances.

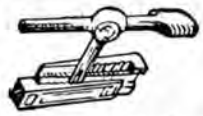
Composing Machines

There are three different kinds of machines made to cast type, aside from those used by type founders themselves. The first was



Midget Quoin

Wickersham Quoin



Hempel Quoin and Key Wrench

and is the Linotype, which casts the line in one piece of metal, the characters, having first been set up on the keyboard by the operator. Similar machines are the Intertype and the Linograph (now defunct), all three names being trademarks for the respective companies making them.

A later comer, but widely used, is the Monotype, which casts individual letters. Two machines are used — one with a keyboard, on which a tape is punched with holes corresponding to the letters in the line. The other machine, the caster, takes the tape and manufactures actual lines of so-called monotype.

The third, the Ludlow, uses separate matrices which are set in a special composing stick. After the matrices are set, the stick is clamped in the machine, and the line cast. This device is used for large display lines.

Composing machines are wonderful and intricate equipment. Like paper cutters they must be in good condition and unworn to produce good results. Newspaper and book printers have them, and big printers need them, too, especially for body matter. Since good composing machines represent several thousand dollars' investment, the smaller printer usually finds it more economical to either use type or have body matter set by firms specializing in that kind of work.

Round Cornering Machines

There are various devices on the market available for round cornering paper or cardboard, in addition to which some hydraulic punches have accessories for round cornering. No special attention need be given them, as their use is plain enough. In addition, most paper and card supply dealers are able to offer round cornering service.

Composing and Make-up Rules

Composing rules are type high, of various lengths for various column widths, and have small ears at each end which overhang the composing stick sides. The com-

positor sets his type against the composing rule. When a line is completed, he moves the rule forward, putting a lead in its place if the work is to be leaded, or nothing if he is setting solid. The composing rule is of particular value on unleaded work because type has a tendency to catch on the previous line, and make proper justifying difficult.

Composing rules come singly or in sets, but they can be made out of brass rule with a little cutting

and filing. Sets of them come in plush lined cases, just as a machinist or toolmaker keeps his precision instruments. The composing rule is often owned by the individual printer, and looked upon as a sort of occupational token. It is also called a setting rule or a printer's rule.

Makeup rules likewise come in various sizes. They are handy in pushing lines back and forth, or handling them when making up a form in the galley, and in making changes or corrections on the imposing stone. They are sometimes called humpback rules, because of their humplike projection in the middle for ease in handling.

Labor Saving Material

The printer has available a large number of items precut to even sizes — that is, in picas and half picas — which on that account is called labor saving. Reglet, furniture, leads, slugs, etc. are furnished by printers' supply houses in labor saving assortments or fonts. When cutting any such material yourself, it is best to keep to the standard sizes as far as possible. If you are obliged to cut an odd or bastard size, be sure when you have finished using

Labor Saving Reglet and Furniture

it that it be cut to an even measurement before it gets mixed in with your standard material.

Mitering Machines

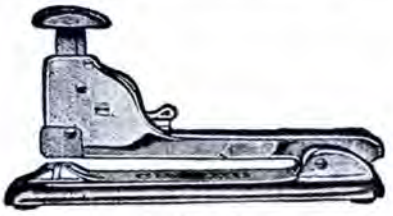
A good job of mitering (beveling the ends of rule so as to make a border or box) is a little bit of a trick, the amount of work depending on the equipment and the skill of the person working it.

There are rotary mitering machines on the market which use blades like a heavy wedge shape circular saw. Such machines are great time savers where much mitering must be done, but they entail an outlay of at least several hundred dollars.

Another is the ordinary mitering machine, which holds the rule in the regular upright position, and shaves off the end to the required angle. Care must be taken when both ends are to be mitered that sufficient stock is left for the operation.

Binders and Stitchers

There are various staple binders and stitchers on the market, the simplest and most easily used being the kinds which employ strips of cohered staples of various lengths. Staples with prongs



A Binder

or legs as long as one-half inch are available, which can be used on thicknesses up to almost that much, allowing for clinching over of the leg on the other side. These machines are often provided with two kinds of table, a flat one for side binding, and a saddle for putting the staple through the center. Models are also made for foot power.

Long Reach Binder

For larger volume of work the continuous wire stitcher is employed, which may be adjusted to different thicknesses, and which is made for foot or power operation. Staple binders of good quality may be had for a few dollars; continuous wire stitchers cost several hundred dollars. Each has its place, and the printer must always consider the volume of a given kind of work in deciding which he will eventually need.

Punches, Drills, Perforators

Round holes are made in paper or cards in a number of different ways. Aside from slit perforations, which are made with brass or steel rule in the press, perforating similar to that used on postage stamps is turned out by machines having a row of needles in the form of blunt cylinders, which fit a lower die and blank out the paper. Various sizes are made, from hand models costing

Hand Punch

about $150 to various foot and power machines. The needles are removable and replaceable.

For bigger round hole punching there is a greater variety of equipment. Ejector press punches — dies which fit in the press and punch as the work is printed — are the simplest. Next come the hand punches which very often are made to give one or more common looseleaf combinations. A more flexible punch, much used by printers, is a hand lever or foot punch in which a number of dies may be assembled, spaced as required, size of hole depending on

the dies used. The workhorses of the business are machines using hollow drills, often with hydraulic feed, which will handle a large bulk at a time, and which accommodates various sizes of drill. The discs of paper or cards punched out travel up through the hollow drill and out; otherwise they'd jam in the drill and it would break. In fact they sometimes do, anyway. Hydraulic drills cost several hundred dollars or more, and like all equipment must be evaluated in the light of the work the printer has to do. Some need such equipment, others will find the various forms of punches more economical.

A Perforator

Lesson Four—Questions

1. *Describe the two kinds of planers and their uses.*
2. *What precaution should be taken when using either bodkin or tweezers?*
3. *In what ways may leads, slugs and rule be cut?*
4. *What should be done to rule after it is cut?*
5. *What are bodkins and tweezers used for?*

The Printer's DICTIONARY

"C"

(Continued)

Cabinet—An enclosed receptacle for type cases, cuts, and similar material, the top of which may be used for a portable press, for making up forms, etc. Open sided receptacles for type cases are usually called racks or stands.

Flat Top Cabinet

Calendered—paper which is polished is said to be calendered. Sized and super-calendered, or S. &S.C. paper, as it is known is very often used for jobs in which there are halftone cuts. S.&S.C. is understood to mean that the paper has had size added and given a special calendering. This is sometimes done after the paper has been all finished and cut.

Caps—Capital letters.

A B C D E F G H

Caption—Heading on article, chapter, page, section, descriptive line over or under illustration.

Card Indicators — The heart,

Card Indicators No. 1

spade, diamond and club symbols used on playing cards.

Caret — A proofreader's mark used to denote an omission from the set-up work of a letter, word or line, or to indicate a similar addition to be made. (∧)

Case — familiar to all our readers, for instance type case, rule case, cut storage case, etc.

(To be continued)

LESSON FIVE

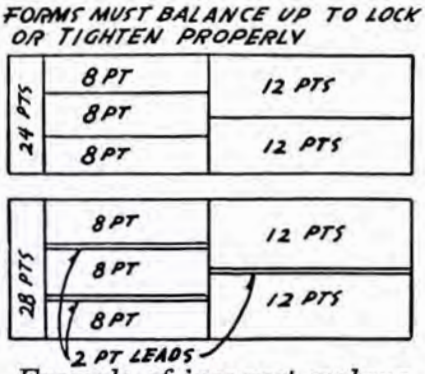
Preparation for Presswork

With the multiplicity of printing presses on the market nowadays, it would be impractical to even attempt to go into details as to the proper operation of all of them. That must be left to the handbooks issued by the companies making the machines themselves. However, it is possible to supply enough information to help in handling the average hand fed gordon or clamshell type jobber, of which there are thousands scattered around the country, and probably will be for years to come. If the press you work is different, you can either adapt it to your needs, or get instructions from the press manufacturer. The bigger, more complicated machines require a service man to show the printer all their ins and outs, and they are customarily installed with that understanding. With such we are not concerned here.

The Squeeze in a Form

There is a certain amount of "squeeze" in any form you put in your chase, but a lot of it can be eliminated by being very careful about making all lines of exactly the same length, and by being sure to fill in around irregular matter with the proper thickness of leads, reglet, furniture, and so forth. If the sum total of one side of a form is one, two, three or more points larger than the other side, or if there are spots elsewhere in the form which lack or exceed the common measurement by even as much as one point, you may find it hard to tighten or lock up the form in the chase so that it can be lifted without a spill.

To check your work for dimension is not difficult. If you have two twelve point lines on one side and three eight point lines on the other, they will equal 24 points, and you will be safe, but if you insert leads between the lines you will have 26 points (24 plus 2) on one side and 28 (24 plus 4) on the other, which situation calls for correction by inserting the equivalent of the extra two points somewhere on the short side—wherever the spacing will look right—not necessarily all in one spot. A small supply of one point leads or brass strips, and half point copper strips are of great help in cases like this. Substitutes of unknown and inexact thickness may cause trouble.



Example of incorrect makeup

Aside from this you will find that the form in its entirety will close in a little when you tighten the chase screws or quoins. Allowance should be made for this when making it up, and particular watch should be kept on wood furniture or reglet if it is old, round edged or battered. Such furniture probably has little or none of the oil in it which was originally applied to prevent absorption of moisture, and there may have been warping. Those printers who have extra chases, and who have left a form standing locked up in one for several months may discover that

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the old furniture which, when used in summer was tight, has, during the intervening months lost a small percentage of moisture, and shrunk just enough to make the form loose.

While on the subject, we can't refrain from repeating a word of advice which we consider of the utmost importance. The leverage or pressure which you can exercise with either chase screws or, if you use them, quoins, is tremendous, so it is better to rely on the form being made so that it will lock properly with a moderate amount of squeeze than to try to make up for inequalities by more pressure. Too much of it will warp or break the chase. Turn one screw or quoin a little, then turn up the next one, and so on, coming back to the first after going the rounds. In this way you will get good, even locking.

Getting the Press Ready

You have put your form in the chase, the chase is in the press, and you are ready to proceed. Be sure that any makeready sheets and dented or scarred tympan materials are removed from the platen, because an even impression cannot be obtained unless the tympan is absolutely smooth. For the usual work, a sheet of pressboard under three or four sheets of book or news paper and an oiled tympan sheet will probably be all right for a starter.

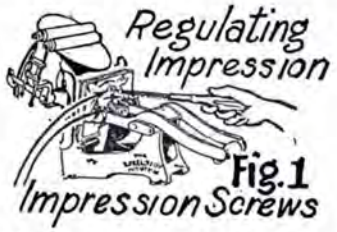
If the tympan is taken off, the replacement should be made by putting the top sheet under the bottom bail, then placing the other material carefully below it, finally binding down the whole with the top sheet (drawsheet) under the upper bail, making very certain the packing is entirely flat — no buckles.

Oiled tympan paper, pressboard, book and news paper are recommended materials for making a good tympan. Depending on the work to be done and what there may be on hand to do it, printers sometimes use ordinary cardboard, chipboard and rubber blanket to obtain results. Rubber blanket, chipboard and blotting stock should not be resorted to unless the form is too big to bring up any other way, or the type is too worn for anything but a soft packing. Envelope printing requires a comparatively soft packing, and usually special makeready.* A good job of card work can often be done with no cardboard or pressboard in the packing, the stock being fed to the press supplying the necessary resiliency, but if you try that, be sure that the impression at start is light enough so that the first proof taken does not squeeze and injure the type.

(This will be covered later)

Taking a Trial Impression for Makeready

The press being inked, you can take a proof on news, book, or the stock on which the job is to be printed. News will be the easiest to get a general idea of the impression. On gordon or clamshell style job presses, the weight of opinion is in favor of leaving the impression screws alone except under unusual circumstances, once the platen has been tested for evenness of impression in the four opposite corners. How to test and correct the platen level will be discussed elsewhere in the course. Assuming you have an ordinary job to do, we'll leave the impression screws alone and build up the necessary squeeze in other ways.



Set nuts must first be loosened. Be sure to tighten them after using Impression Screws.

If form is weak on one side you may need to tighten Impression Screws, but before doing this see article on makeready.

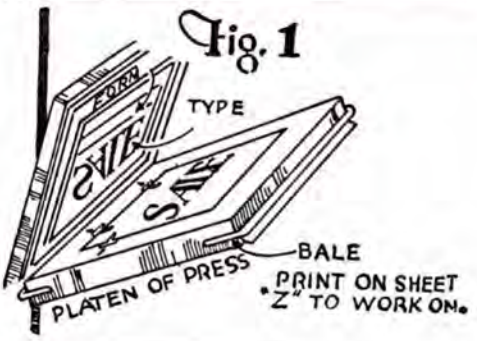
If the impression is clear all over, turn the sheet over and see whether there are any spots which are embossed or punched from the printing on the other side. If there are, the whole job needs less impression, rather than more, because your finished job should have no evidence on the back. If the tympan is down to the near-minimum recommended as a starter, the chances are the impression screws were set up too far the last time they were touched. They will have to be slacked off, and the platen readjusted as already mentioned.

The odds are, however, that your first proof will either show very little impression at all, or be indistinct in spots. If low all over, you can add another sheet of tympan paper, or book stock. Keep the tympan as hard as possible. A good hard tympan on the platen makes for clear, sharp impression. A soft tympan not only is likely to show through on the other side, it will wear the corners of your type, rounding them off. When worn type and material is mixed with unworn or new in a form, more time and work is required to patch up and make ready.

Once the impression is satisfactory over part of the area, through addition of full sheets of paper or cardboard, you are now going to make ready.

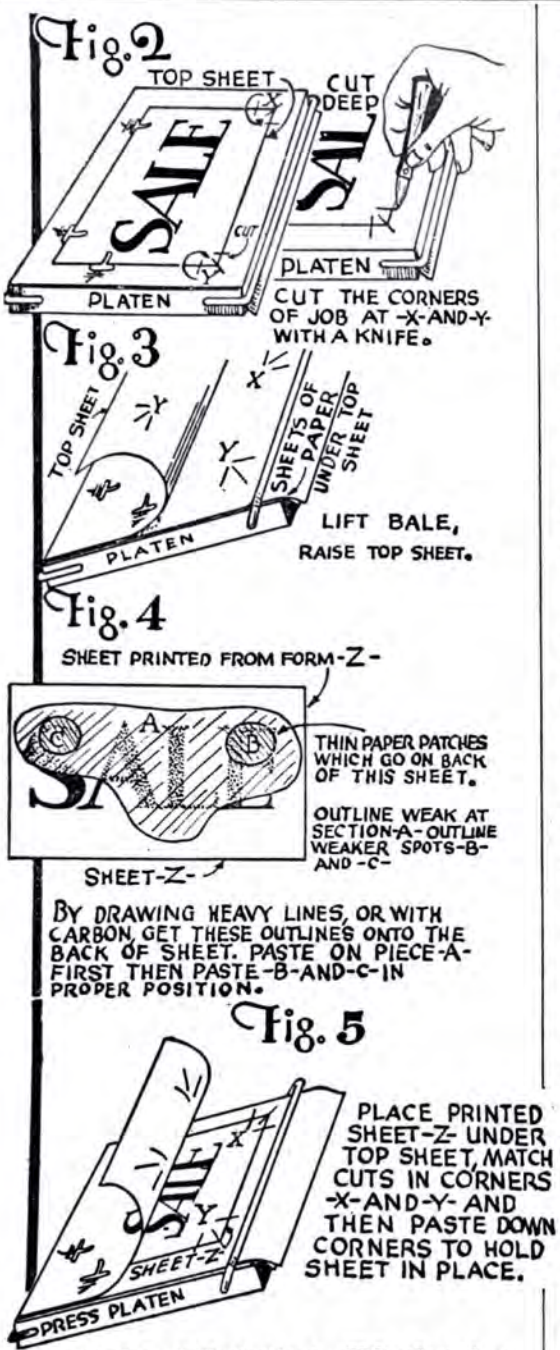
Makeready

If one or two characters or spots are punching through, examine the tympan to make sure there are no lumps under it. If there are none, you probably need to take the chase out of the press, loosen the form, and plane it smooth again, because the punching is coming through letters being too high. This will necessitate another trial sheet, as relocking the form may change the relative positions and amount of spotting up.



After this is done take your trial impression sheet, and mark out the poor spots, outlining them in pencil. You are going to *spot up*, to use the printer's term. You can only do this if the ink is not too heavy, so that the low spots will show, so be sure the ink is on the weak rather than the heavy side.

The accompanying illustration will help you to understand the



More details and illustrations will be given in a later lesson.

making of an overlay, as it is called. The impression in this case has been taken on the top sheet, instead of on a separate piece of paper, which is permissible. The weakest spots will require several patches, each smaller than the previous. The best paper for spotting up is something thin — tissue, manifold, French folio, or similar. By holding the sheet up to the light, or using carbon paper, you can get your markouts on the back, and paste the patches on it. Use as little paste as possible — more will hurt your impression.

An impression can be pulled on one of the sheets under the top sheet, and the pasted up sheet placed exactly over it, in register, so that your overlays will be in the right locations. A sheet of plain paper can be removed from the tympan to compensate for the one just added.

Make sure that the top sheet of your tympan is drawn firmly back when you put it under the tympan bails, then take another impression. There may and probably will be some low spots still visible, which are corrected by another overlay sheet as just described. If a second does not finish it, you can make and add a third. When the makeready is complete, put your pressboard or hard board directly under the top sheet of the tympan. This will make for a good sharp, clear impression. If it is already on the platen, it will only require moving up. If you are now putting it on in addition, enough paper will have to be taken off to compensate for the thickness of the board. Procedure throughout the makeready process varies with the individual printer, so you will quite likely learn of other, and possibly just as satisfactory, ways of arriving at the same result.

When the form has cuts which are either partly or wholly below printing level, or when a single line or more, due to its surroundings, fails to print, you can make use of underlay instead of over-

lay. Underlay consists of layers of paper or card under the low spot or line, and the illustration shows you how they are made. Underlay, just as overlay, is a branch of makeready.

After the makeready is done, look out that you do not loosen more than one tympan bail at a time, because the makeready sheets may shift if you do, and spoil the impression.

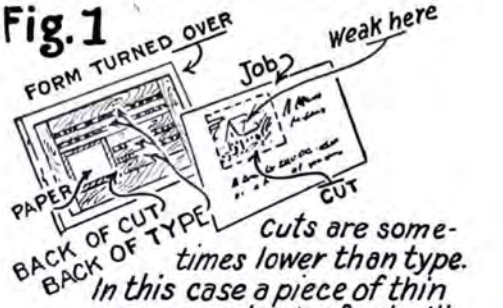
Earlier we learned how to make an impression on the top sheet, for setting the gauges and grippers. This impression can be wiped off as soon as the setting up is done. An oiled tympan top sheet will make this easy without cleaning liquids, although gasoline or benzine may be used if the tympan is not oiled. A sheet of the stock to be used can then be fed, to check the position of the gauges, and correct them if necessary.

Halftone Makeready

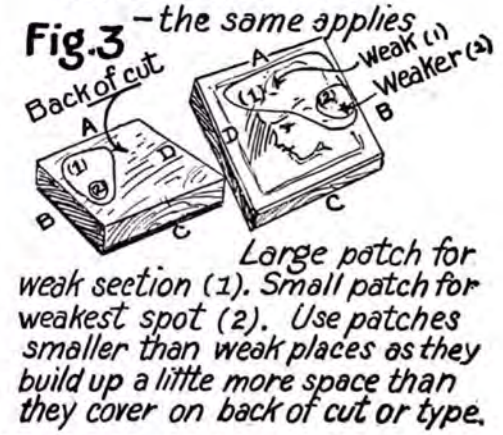
Up to 1890 cuts for illustrating were largely confined to woodcuts, type cuts, chalk plates, and in the latter part of the period, a few line etchings. The makeready for these was fairly simple. A good many books were illustrated with steel or copper engravings, but this was a separate craft, and the printed plates were purchased outside.

One invention leads to another, and photography had to become widely used before technicians started to adopt it for plate making. The halftone appeared shortly after the line etching. Halftones are produced by photographing the picture or design through a screen on a copper or zinc plate, the screen breaking the result into larger or smaller dots. As in the case of a line etching an acid bath is used to eat away the parts which are not required to print, with the result that the parts with

UNDERLAYING



WHEN USING A CUT—



More details on cuts will appear in a later lesson.

smaller dots print lighter, while at the other end of the scale the dots get bigger and finally merge to form solid color.

As you probably have discovered, in printing, more pressure is required to make solids than light forms, and halftones are no exception. Halftone makeready requires building up under the solids to give them the proper tonal quality, which build up at the same time takes the squeeze off the lighter parts. A good job of

halftone printing calls for more time on makeready than on the same area of type or other printing surface.

Coarse Screen Halftone
(To show the dots)
This kind is used on News and other rough papers—Fine Screen used on smoother paper has smaller dots

Both underlays and overlays can be used for halftone makeready. In general, underlays are valuable if an area is low which does not necessarily coincide with the light and heavy parts of the halftone itself. Practice and experience will do more for you than printed advice in all makeready work.

Overlays will provide the extra pressure on the specific spots which require emphasizing in the picture itself. If the halftone is from a photograph, you will endeavor, by overlays, to give the picture the same snap and character which appears in the original. A halftone without overlay has a tendency to greyness and monotony of color detail. Observe those used in newspapers, which the time element in publishing prevents bringing up properly.

For underlay, follow ordinary underlay instructions. On the overlay, a little more work is necessary. Take an impression on the sheet under the first tympan sheet. This can be done by loosening the bottom tympan bail, pulling the top sheet out from under it and rolling back the top sheet, being careful not to disturb the top bail, and replacing the bottom one before making the impression. Both bails cannot be loosened at once; if that is done the tympan may shift, throwing the makeready out of position.

Take another impression on thin smooth stock. Examine this carefully for spots which can be improved. The solid parts can probably stand more color. Put a carbon sheet face up under the printed proof, so that when you outline the part to be brought up, with a pencil, the marks will show on the back. Trace around the sections which need the most additional treatment, also those that need medium impression, and, if necessary, a third lining off for those that need only a little more pressure. Cut pieces of white tissue, French folio, or some other thin paper, and paste on the back as indicated by the carbon lines, one thickness for light, two for medium, three for heaviest impression. Place this finished spot sheet directly over the impression on the tympan, using great care to have it exactly located. Roll back the drawsheet, put it under the lower bail, and try an impression on the stock for the job. If the cut needs more attention to be satisfactory, proceed again as outlined above.

The Importance of a Clean Imposing Surface

Mention has been made before of the necessity for having an absolutely smooth form in your chase —all type locked or tightened in the chase with no high or low letters, because otherwise some letters will punch through the paper, and others will not show up at all. On the Excelsiors, the chase bed

makes a good surface on which to put your chase when you want to tap down your form and make it smooth. Remember, never use a piece of metal for that job—always use a planer or a similar piece of wood which you know to be absolutely smooth, level, and free from any inequalities of surface, dents, etc. A marble imposing surface is very handy, and will enable you to leave your chase bed in the press. It will also give you more room to move around on. The main thing is to get a surface, metal or stone, which is level and free from any blemishes, as well as properly supported so that there will be no bend, give or warp in the surface.

Just as important as the surface itself is keeping it smooth and clean. A minute speck of metal is all that is necessary to keep one letter in your form from planing down to the proper level, and it is very easy indeed for small specks of wood, metal, ink, etc., to stick to the imposing surface unless it is kept wiped off. You will find it best to do it at least every day, because one or two high letters in your form will spoil the appearance of the job, wear the type down before its time, and hold the impression and rollers off the surrounding type. Proper planing down of your type form, plus a clean imposing stone, will eliminate time-taking work, and produce better results all round.

Speaking of planers, you will find that even the surface of the planer will become rough and give trouble if a form which has been inked, but which has been hauled out of the press for correction, is planed down again without wiping off the ink. So watch the surface of your planer too.

Lesson Five—Questions

1. *What kind of tympan packing is best for ordinary work?*
2. *What should be your aim in building up your tympan packing?*
3. *What should be done before you spot up for makeready?*
4. *When is overlay used and when is underlay preferred?*
5. *Take a proof of any halftone cut you may have (if you have one) in your press, if you own one, and mark it up for overlay. Make another proof, and add such other overlays as may be necessary to get good results from it.*

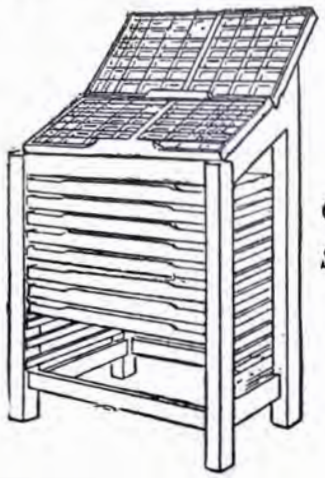
The Printer's DICTIONARY

"C"

(Continued)

Case stand or case rack — A frame made to hold type cases, usually applied to those without closed in back or side, these latter usually being called cabinets.

Sloping Top Cabinet (steel)



Case Stand

Caslon, William—Born in 1692, died 1766. One of earliest Eng-

This type is CASLON.

lish type founders, and designer of the type that bears his name.

Casting Box—Metal box used to make stereotype casts. Before the advent of electrotyping, stereotype casting was done by most printers.

Casting off—Measuring type to find out how it will divide into pages, or sizing up the copy so as to determine the number of type set pages the copy will make.

Catalog Letterhead — A sheet with letter on the first page and advertising on the remaining three. Sometimes bond paper is used, sometimes book paper, and sometimes a special paper made with a bond surface on one side, coated on the other.

Catchword—Word at the top of the column, as used in dictionaries; in books of long ago the first word on a page was repeated at the right hand bottom corner of the preceding page, to help in continuity of reading; this likewise was called the catchword.

Caxton, William — Born 1422, died 1491. First printer of English books in England.

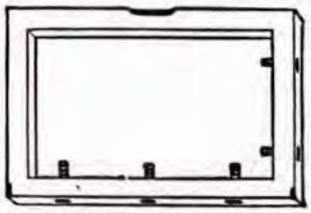
Cedilla—Accented letter (ç) indicating that letter should be pronounced as an s (soft c.)

Cellulose—The basic material of all paper, obtained from many sources, including cotton, wood, cornstalks, etc. The purest cellulose comes from cotton or flax, hence the demand for old rags in making high grade writing or bond paper.

Chapel — Printing was at first very closely identified with the church, so much so that many printing terms reflect this connection. One of these is Chapel, a term now applied to the organization of union printing employees in a union printing office. One of the men is elected chairman, and handles all questions between the other members of the chapel and the employer. Chapel laws are union rules.

Chargeable Time — Time consumed on work which can be charged directly to a specific job, as contrasted with time which normally cannot be so charged, and which is consequently part of the overhead.

Chase — the metal frame into which the form of type, cuts, etc.,



Chase

is placed, which is in turn put in the press, and printing produced therefrom.

Chipboard—Board made from lowgrade pulp, waste, etc., such as pad back board. Much used for boxes and containers but not where strength is a consideration.

Chroma—one of the three "dimensions" of color, which are: Hue, Value, Chroma. Chroma defines the strength (intensity) or weakness of a color *as a color* and not in terms of its lightness or darkness.

(To be continued)

LESSON SIX

Feeding the Press

We will describe the operation of the ordinary hand fed jobber only. Information on any press having a mechanical feeder may be obtained from the maker, no single set of instructions being applicable to all.

Press feeding, like some other operations of printing, depends not only on the job, but on the individual printer. There is no such thing as the only way, because different kinds of stock require different handling, and one man may prefer his method in a given circumstance over any other. The instructions supplied here must, therefore, not be construed as the only way, and they must be viewed in the light of your own subsequent experience.

Inking

Care should be taken not to over-ink. If the job is small, the plate should carry very little ink,

and the best way is to put it on with an ink knife or a hand roller. If the ink knife is used, the ink should be well spread before the press rollers are run over the plate. Additional ink should be applied very sparingly, and at the edge of the plate if with a knife. The hand roller (brayer) will do the best job of distribution. If the press (form) rollers are used, the chase had best be removed so that the form will not become gummed up.

For jobs whose printed surface uses a considerable quantity of ink, the ink fountain is helpful. This must be carefully adjusted so that it will not overink. Small card and stationery jobs are bet-

ter handled without a fountain, because it is difficult to keep the right ink down to the required level, and the cleaning up of the fountain after the run takes more time than is saved in not having to stop for inking.

Watch the "color" of the impression, that is, make sure it is clear, uniform and not weak, but keep the amount of ink down so that the work will not offset or smudge. This requires more frequent inking and in smaller quantities, but the results will be better, and it may prevent a lot of trouble with a non-drying or offsetting job.

Feeding—How It Is Done

The sheets should be fanned out, as in the illustration, so that the fingers can grasp them individually. It will then be possible to pick up most stock with the right hand as shown. The sheets may also be fanned out by placing the thumb on the pile, exerting a slight downward pressure, and drawing towards you about half an inch.

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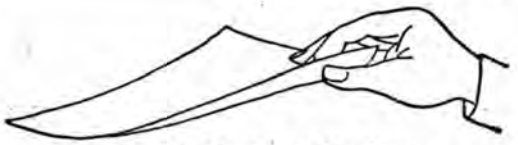
Start slowly, otherwise you will not get your sheets down to the gauges accurately, and will have too many out-of-register sheets. You can pick up speed later.

With the left hand, grasp the sheet in a spot which will not smudge, and remove it to the left hand side. While you are doing this, your right hand is picking up another sheet, and feeding it to the press. Get into the rhythm of the press, so that your movements are coordinated with the opening and closing of the platen. If the sheet is misfed, use the throwoff lever to prevent an impression. While you will have frequent resort to this at first, you will gradually get away from it, and your speed will increase.

If the job is small, and you have not inked too heavily, you

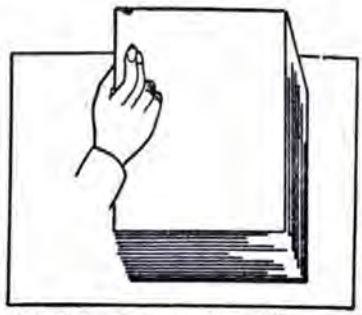


One Method of Feeding

can probably pile one sheet on the other without danger of offset. If, however, you haven't, or the job is a large enough one so that more ink had to be carried, the sheets will need to be spread out, shingle fashion, so that they will have at least a few moments' exposure to the air before another row is placed over them.

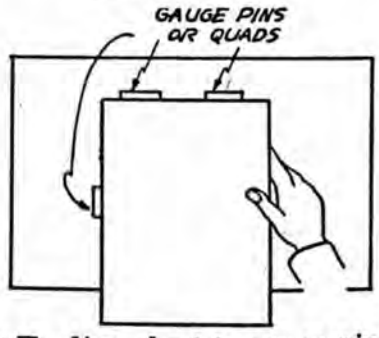
Large sheets or small sheets which are flimsy often call for turning over as they are being fed. This is also called flopping or flying the sheet. The stock to be fed is placed on the feedboard with the side to be printed face down instead of up. This is accomplished by picking the sheet off the pile as shown in the illustration — and with a firm hold turning it before pushing it against the gauges.

Flying (or Flopping) a Sheet



1. Picking up a sheet from pile fanned out—sheets face down

2. Turning sheet over in the air

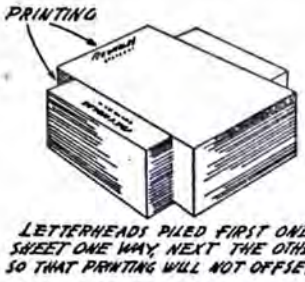


3. Feeding sheet to gauge pins or quads—right side up

Slipsheets

If you still experience trouble with offsetting (transferring of ink from one printed sheet to the bottom of the other) and if the sheet is too big to lay out shingle

fashion, you can interleave the job with newspaper or other sheets, one between each pair of printed impressions.



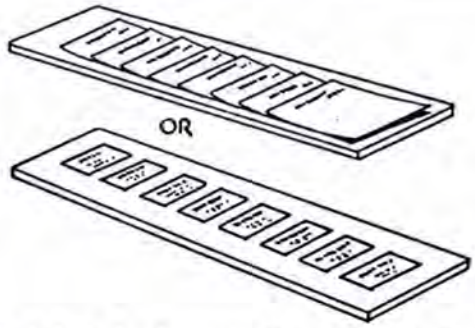
LETTERHEADS PILED FIRST ONE SHEET ONE WAY, NEXT THE OTHER SO THAT PRINTING WILL NOT OFFSET.

The Effect of Temperature on Presswork and Inking

Even with good rollers, satisfactory presswork is often not possible if the temperature of the pressroom has not been at least seventy degrees for at least an hour before starting. Ink will not work up well when cold, and if the press metal is chilled, the ink cannot be distributed evenly. An attempt to counteract the effect of poor distribution by using more ink may be all right for a cheap poster, but it is not suitable or satisfactory for high grade work. Rollers will not function properly, either, at sub-normal temperatures.

In extremely cold weather, wher heating systems are working hard to offset outside temperatures, the indoor air often becomes excessively dry. In the process a pile of paper will be so affected with static electricity that the sheets may stick together and to the tympan when you attempt to remove them from the press. This can to a large extent be corrected if the paper is given a chance to "season" — that is, kept at normal temperature long enough for the whole heap to attain the same temperature. If the paper is divided into a number of piles this process will be speeded.

On power and automatic presses all kinds of devices are used to get rid of static electricity, including such a home remedy as draping Christmas tree tinsel on the machine where it will brush the paper as it goes by, removing the charge and grounding it. An automatic feed machine can be rendered almost useless if static



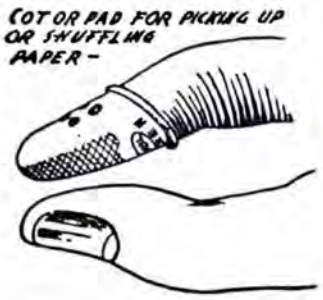
Printed sheets spread to prevent offset

is present in the paper. Sheets will wind themselves into the mechanism and completely foul it up before the automatic safety devices can shut the power off. The hand fed machine does not give anywhere nearly so much trouble, but you will want to know what causes such difficulties, so that you can take the proper steps to eliminate or at least minimize them.

For Feeding Work Easily and Quickly

In feeding paper or cards with very little margin, where the finger is likely to reach over and blur or smudge the fresh printing, if a larger grip is taken, a small piece of sandpaper (fairly fine grade)

wrapped over the index finger of the left hand, with sand surface out, held in place with a rubber band, will make it possible to get a good firm grip without over reaching onto the inked surface.



Another way of doing the same thing is to buy the rubber finger pads which stationery stores sell, and which fit over the finger like one short finger of a glove. In our own printing department a rubber pad is used on the right finger, for picking up the blank stock, and a piece of emery cloth is used on the left for lifting out the work. The emery cloth is used because it has a longer life than sandpaper. We might add that these two kinds of pads are used on all work, whether the margins are narrow or not, because it helps to get speed.

Still another way is to moisten the end of the finger with glycerine. A little glycerine can be put on the back of the other hand, and when the finger gets dry, it can be remoistened from there. The finger should not even be damp—just the least bit sticky is all that will be necessary.

Cleaning Preparations and their Use

There are all sorts of cleaning preparations for printers on the market, but most of them are based on one of two general principles. There are the various hydrocarbons, like benzine, gasoline, benzol, etc., and there are the alkalis like soda ash, lye, etc.

Up to the time that benzine, and later gasoline came on the market, all cleaners were alkalis. However, each has its place, and may be used to best advantage if you understand the properties of both.

For general use, a hydro-carbon cleaner such as gasoline will fill the bill very satisfactorily. The higher test the gasoline is, the better. Benzine is also good. If you want a bang-up fine cleaner which will work fast, make your cleaner of equal parts of the following:

High test gasoline, acetone, alcohol, benzol. Avoid leaded or ethyl gasoline—use so-called white or any brand which does not contain lead.

All the above may be purchased at most drug stores, and while it is a little expensive, it is very efficient. A cleaner made with a larger portion of gasoline will also work well, altho not equally with the unadulterated formula. It is said that the government printing office varies this formula by the use of 60% benzol and 40% acetone. The very high evaporating qualities of such a cleaner mean a dry, clean form and ink plate. It should not be used on rollers except when they are so swollen with moisture that shrinkage is desirable.

The way you handle your cleaner and how you clean, will have a decided effect on results. The type

or form to be cleaned should be first rubbed with a rag saturated with cleaner, so as to take all the ink off which will come without using the brush. Then the brush should be used. If you use your brush first, it will force the ink down into the crevices, and eventually your type will be crusted around the edge in such a way that it will be difficult if not impossible to get the type to stay up snugly. The old crust will act as a barrier to prevent the pieces of type from standing straight, shoulder to shoulder.

An alkali cleaner should be used occasionally on all forms, because nothing will clean as thoroughly, and if you want to keep your type in the best possible condition, it may be done in that way. You will also find it best for old and aggravated cases of old ink or crust on ink plates, type and rollers. It should not, however, be used on rollers unless the ink has been allowed to harden so that benzine or one of the other hydro-carbon cleaners will not do the work. In extreme cases on type and ink plates, the solution may be applied in the regular way, and then several sheets of paper also saturated with the cleaner may be spread out on the form and allowed to stand over night. After the alkali cleaner has been used, it should be washed off carefully with clear water. Wood furniture should be removed from the form if you are going to let the cleaner stand on it over night, because the alkali will draw the oil out of the wood, and it is the oil which keeps the furniture from warping. Rollers on which the alkali cleaner is used should be wiped dry with a cloth after washing in water.

Printers often buy a can of concentrated lye at a grocery store. If the quantity used warrants it, the whole can is dissolved in a stone crock or cast iron kettle. If not, the unused lye should be placed in a glass jar, sealed tight, otherwise it will absorb moisture from the air and soon eat the tin can entirely thru.

You can make your own alkali cleaner if you want by purchasing Tri-sodium phosphate (40%), soda ash, 58% quality (45%), and ground caustic soda, 95% quality, (15%), and mixing them together in the percentages given in the brackets, but the small amount used for a great deal of cleaning solution usually makes it cheaper to purchase the already manufactured preparation.

Cleaner Can of the safety type

If you use gasoline, benzine, or any similar hydro-carbon cleaner, you will find it advisable to consider the use of a safety can to hold the liquid. This can will not spill, even when turned over or upside down, yet a slight pressure around the nozzle, when you are using it, brings forth the right amount of cleaner as easily as if the can had a wide open mouth. Such a can, while particularly good for inflammable cleaners, also works out very satisfactorily for

alkali cleaners as well, because the amount of cleaner used may be so easily controlled.

During most seasons of the year it is best to use kerosene for cleaning your rollers, rather than the other cleaners which have a tendency to draw the life out of the composition, and make the surface hard and glassy. During extremely moist, warm weather in summer, the use of gasoline, benzine or similar cleaners will not be detrimental, because at that time the problem is, how to remove moisture rather than to conserve it, and the hydro-carbons are great moisture removers.

Always make sure that rollers are thoroly wiped, because any greasy substance left on the rollers will adulterate the ink and cause trouble in printing and drying.

Careful attention to cleaning will preserve for you your type, with its originally clear sharp face, it will keep your rollers in the best condition, and if with these you have a clean ink plate, on which the only ink is that which you have just put on for the job on hand, you have everything in your favor toward producing a good clear job of printing without a lot of fuss and bother.

Preventing Offsetting On Platen

There are times when it may be necessary to "back up" (print the other side) of sheets so soon that the ink from the previous printing has not thoroughly dried, with the consequence that enough ink eventually transfers itself to the the tympan or platen padding to cause sticking, and some offsetting of the ink on sheets being fed. If the first run has been very accurately registered, the inked parts will only touch each other, and no great harm will result, although the sheets may stick, but if they are at all off register, something will have to be done about it. If, likewise, an impression is inadvertently made on the tympan, this also must be removed before any more sheets are fed into the press. Gasoline or Print-O-Clene can be used successfully in both instances. It will dry off quickly and not harm your work.

An oiled tympan sheet will have a tendency to prevent offsetting and sticking. Ordinary brown kraft or wrapping paper may be oiled and serve the purpose, but no surplus oil should be left on the paper.

Some printers don't want to take the time to clean off the tympan, and they report that talc or ordinary talcum powder will, if rubbed over the ink on the tympan sheet, prevent it from sticking or transferring itself to your work. The time saved is in making it unnecessary to let the tympan dry as must be done when a liquid is used.

Lesson Six—Questions

1. *What precautions should be taken for proper inking?*
2. *How can offset be prevented?*
3. *Describe one way of straightening the printed sheets.*
4. *How are flimsy sheets or large sheets fed into the press?*
5. *What causes sheets of paper to stick to themselves and the press? How do you prevent it?*

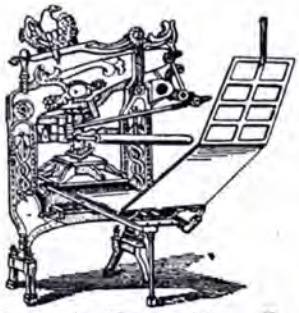
The Printer's DICTIONARY

"C"

(Continued)

Chromo— A print from a species of lithography in which there is a separate run for each color.

Close Matter—Type set without leads and with few short lines or paragraphs.



Clymer's Columbian Press

Clymer, George — Inventor, in 1816, at Philadelphia, of the first lever press, as contrasted with the previous screw style (of the so-called George Washington type) which had been used since the beginning of printing.

Coated Paper — Book paper of high grade, having a coating to provide an extra smooth surface for printing—enamelled. The coating or enamel is usually a mixture of various substances, among the more important being china clay, or chalk, glue, and flour. Some paper mills make a distinction between coated and enamelled paper, the latter being the more high priced. Coated or enamelled paper is particularly satisfactory when high grade cuts such as half tones are to be used.

Cockle—Wrinkling or curling, particularly along the edge of paper. Sometimes used to describe a rough or ripple finish bond or cover paper.

Collotype — The photo-gelatine process of printing, very closely related to gravure, but superior in that practically identical results to photography may be obtained. It is also variously known as artotype, albertype, heliotype, and by other similar names. Special presses are used for the work, and the plate is of glass, with a gelatin surface. While it is not suitable for long runs, it is ideal for illustrations of merchandise which require a limited number of prints of a higher grade than halftones, but less costly than photographs.

Colophon — The trade emblem of the individual printer or printing firm, the "printer's mark." In the old days each printer had his mark, and it appeared on all his work.

Color—In printing is used in the ordinary sense, and also to describe the amount of ink on the page; if the "color" is poor, it may be due to insufficient inking, or if there is too much color, the form has too much ink on it, although in both cases, the "color" may be black.

Color Work—Any work that is done in more than one color.

Column Rule—A piece of rule used to separate columns in magazines, newspapers, etc.

This is column rule.

Combination Monograms

Combination Monograms — Individual letters made in monogram form, so that combinations of two, three or more will have the appearance of especially made monograms. Used on stationery, cards, playing cards, match boxes, and on

all work on which monograms are required.

Combination Plate—A cut consisting of a combination of halftone and line etching, or any combination of two or more processes of engraving in one plate.

Commercial A—This (@) character, which is used in price lists and similar work to mean "at" or "to".

Complementary Colors — Those colors which, together, contain all the elements of light—for instance, red is complementary to green, blue is complementary to orange, etc.

Composing—In printing offices does not mean creating music or poetry, but the setting of type. A compositor is a typesetter. This latter word is a little more exclusively a printing term.

Composing Rule — A piece of steel or brass rule, type high, with ends or ears that project out wider than its body, used to make setting of type easier in a composing stick. When a composing rule is used between the last finished line and the one on which you are working, it prevents the new line from sticking on any of the pieces of type in the other line, and therefore makes spacing out the line, or justifying, as it is called, more accurate and easy. Composing rules may be home made from ordinary brass or steel rule.

Composing Stick

Composing Stick—A holder for type, held in the hand while lines are being set up in it. Type set up in the composing stick is afterward transferred either direct to the chase, or into a galley when you are making up a job.

Composition—Actually, the setting of type, although sometimes stretched to cover everything pertaining to getting the form or job ready for the press. See also *Imposition* and *Make-up.*

Compound Word — Two words connected by a hyphen. Of late years there has been a growing tendency to get along without the hyphen, although not necessarily with the approval of grammarians.

CONDENSED TYPE slender Letters

Condensed Type—Narrow faced type like the specimen above.

Copper Spaces—Same as brass spaces, but one-half point thick. See *Brass Spaces.*

Copy—Any matter which is to be set up, in whatever form, is called copy. Like hay, water and other similar words, it is, when used in this sense, never prefixed with the article "a". Other meanings of the word are, we feel sure, well enough known to require no explanation.

Copyright—Exclusive right to publish or print original matter obtained from the Register of Copyrights, Library of Congress, in Washington, D. C. If you want to prevent anyone else from using your original printed matter, full information about copyrighting a book, paper, or any other printing may be obtained with the proper application blanks from the Register of Copyrights.

Corner Quads

Corner Quads—Pieces of metal made in the form of a right angle, used to hold the corners of rule together in forms which are surrounded by rule.

(To be continued)

LESSON SEVEN

Distributing Type

Putting type back in the cases is just as important as the setting, because if type is not distributed properly future jobs will be full of wrong letters.

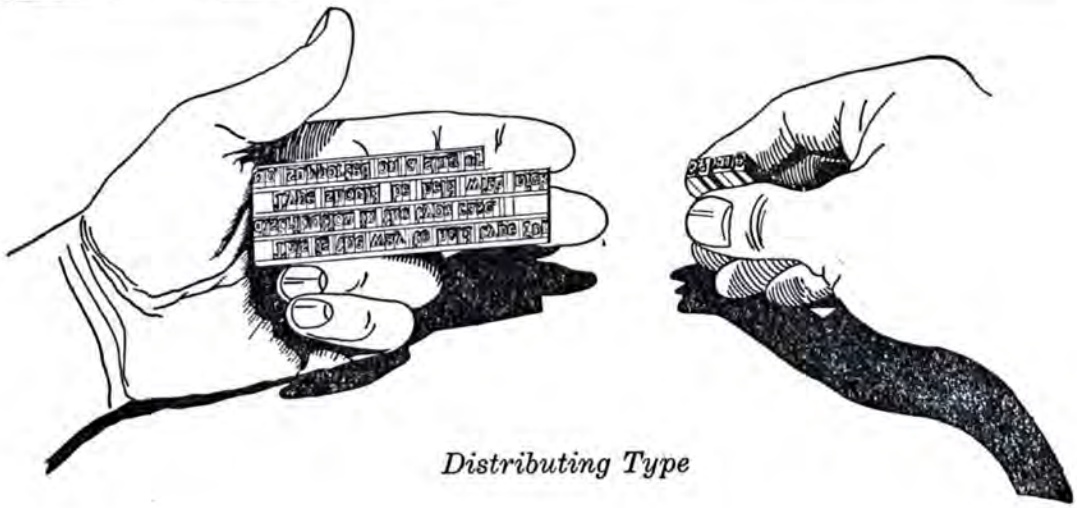
Our picture shows the method of holding the type while distributing it in the case. Start with one or two lines, rather than the quantity shown, if you have any doubts about handling more at first. See that there is a lead or piece of brass rule under the lines before you balance them. The nicks should be up. Hold in the left hand; take a word or so in the right hand, and by rolling the type slightly as you throw it in, you will separate it if the letters stick together. Spell the letters or word out as you throw in; it will help to get them in the right places.

Be sure before you start that the type is all one face and size. Go through the form in advance and separate the lines of different types. If there are more than one kind in a line, watch for those lines when throwing in.

To clean up a mess of pi, or jumbled type, remove the lead slugs, rule, etc. if any; take your composing stick, and set up the largest size of type, distribute it, then take the next largest and so on down to the smallest. Nicks will be found convenient for distinguishing more than one type of the same size from the other, but not conclusive, because of late years, with the newer casting equipment, founders have not been keeping to one nick for a style of type as they used to. However, you can ascertain how far the nick can be followed when you come to distribute your type. A little water sprinkled over the form with a sponge will make it handle easier — less likely to pi. Make sure all wood reglet, furniture or cuts are removed first as the water will warp them.

Distributing Leads and Slugs

These can be gathered together in a galley or some other convenient receptacle so that the ends can be jogged up. This will leave them so that you can pick out the longest, put them at the end, then take the next longest, place them next, until you have them all sorted according to lengths, with



Distributing Type

the shortest at one end, the longest at the other. They can then be placed in the lead and slug rack, in their allotted spaces. Be careful to check them with a line gauge so that if there are any odd sizes they can be trimmed to a standard one before putting away. In most shops anything not on even picas or half picas would be considered odd, or bastard sizes.

Getting Similar Characters In Their Proper Places

There are two kinds of type characters which lead to confusion and misplacing in the case. The first group are letters which are practically the reverse of each other, such as b, d, p, q, etc. After a while you'll get used to reading them correctly.

The others, which perhaps offer more chances for errors in setting as well as in throwing back into the case, are cap I, lower case ell (l), figure one (1), cap O and cipher (0).

Generally speaking, as in ordinary roman faces, the serif on the cap I squarely crosses the top of the letter, the lower case ell has one has a bigger serif than the

I l 1 O 0

Examples of letters easily confused

a short curved serif on the left (right in the type) and the figure lower case ell (see illustrations).

Most cap O's are wider than the cipher, as you will also note from the samples shown.

The figures 6 and 9 should be watched, but as the nick identifies them there should be no trouble outside occasionally placing them in the wrong compartment through carelessness. The same applies to lower case n and u.

Why the J and U Are Not Carried Alphabetically In Type Cases

We refer, of course, to the capital J and U, because "lower case" (small letters) are arranged according to a layout which does not follow the alphabet. Lower case letters are supposed to be so placed in front of the printer that he can make speed in typesetting—not just like a typewriter keyboard but for the same reason. Some type cases, having the caps just over the lower case letters, are not affected by the ordinary cap layout, and for reasons of simplification, square cases strictly follow the alphabet. (Not irrevocably, because anyone who buys them can arrange it to suit himself.)

Cap cases or California cases will be found with diagrams placing the J and U after the Z. Of course, nobody is obligated to put the type in the cases that way, but if the printer follows the custom he will do so.

J and U are comparatively new letters in the alphabet—not new as things go in the New World, but recent in terms of the alphabet itself. J is a variation of the letter I, and U of the letter V, as those

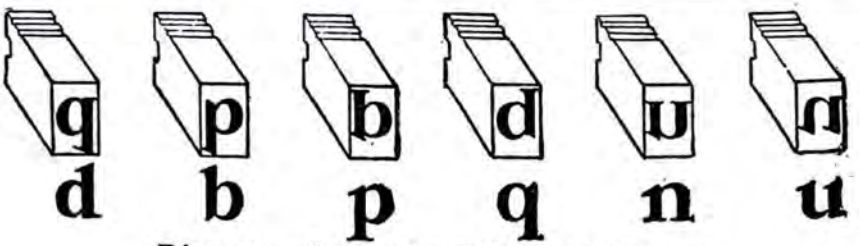


Diagram shows the difference between letters which seem alike to the beginner

who took Latin in school will recall. JULIUS CAESAR, if he came to life, would recognize his name better if you spelled it IVLIVS. The origins of printing being what they are, the case did not provide for the new letters until the old layout had been well established, and changes, as on the typewriter keyboard, do not come easily. A good many years ago attempts were made, in this country at least, to alter both upper and lower cases in a number of particulars, but the California style is about as far as it ever got, and beginners by the million (now that printing is taught so commonly in the schools) are still following the old trail laid out half a millennium ago.

To Clean Shaded Letters

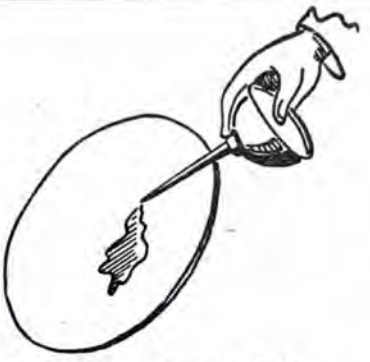
Sometimes, after considerable use the fine lines in shaded type become a little clogged with ink, in which case the type should be cleaned to produce first class work.

If your Shaded Old English, your Steelplate Gothic, or, any of your other shaded type, or type with fine lines become filled with dirt so that a good clear impression is not possible, try a rubber eraser on the type. The same thing can be used on dirty halftones to advantage.

The printer who wants to clean shaded type can buy the gum cleaner used by stenographers to clean the keys of their typewriters. It is pliable and applied to the type with a gentle pressure such as one uses with a blotter on ink. It is similar to wall paper cleaner in that the dirt it absorbs can be worked into the gum and it does not soil or injure the hands. This cleaner has a long life and its effectiveness is surprising. It has a sticky, tacky feeling like a good press roller, and must be pressed, not rubbed over the type. It should not be confused with soft gum erasers, or the art gum erasers which are more crumbly in texture.

Cleaning the Press and Form

The form should be removed before cleaning the press itself. Wipe the type off first without cleaner, then use cleaner and a brush. If you put the cleaner and brush on first, the diluted ink runs down into the form and makes it dirtier than necessary.



SQUIRTING OIL FROM OIL CAN ON INK PLATE TO MIX WITH INK AND MAKE CLEANING EASIER

If you are cleaning a job press, lay a sheet of paper on the ink disc, and run the rollers over it. Take off as much ink as you can that way, then use cleaner on a rag to finish. Make sure the plate and the rollers are absolutely clean and free from lint.

Testing the Platen For Even Impression

Before any makeready is prepared, it is essential that the platen be true on all four corners. You can check this by lock-

ing four big pieces of type, in the chase, one piece in each corner, the bigger the better, such as W or M. Make sure they are planed down well, and take an impression. Adjust the impression screws until you have equal impression on all four letters, then set the impression screw locknuts very tightly.

On most platen presses of the gordon or clamshell type (not including two roller hand presses)

makeready will take care of all further changes in impression, aside from very exceptional instances, of extremely heavy or unbalanced forms. If any alterations of the screws are made, they should be set back to their former position as soon as the special job is done, using the above method of levelling the platen.

Lesson Seven—Questions

1. *Describe how you go about distributing type — precautions to be taken, etc.*
2. *What is the easiest and quickest way to distribute leads and slugs?*
3. *What characters are easy to misplace because of their similarity?*
4. *Give the steps in properly cleaning a type form.*
5. *What should be done before a form receives any prolonged treatment of cleaning solution?*
6. *How do you test the platen for even impression ?*

The Printer's DICTIONARY

"C"

(Continued)

Fancy Corners

Corners, Fancy — Ornamental pieces of type used on the corners of cards and all printed matter. Pieces of border may often be used as fancy corners.

Corrections—Any changes made on the printed proof for alteration in the form, whether mistakes or otherwise.

Counter

Counter — A device for keeping track of the number of impressions made on the press. Counters should not be confused with numbering machines, which actually print numbers in rotation on the job as it is being put through the press.

Cover Paper — Various grades and kinds of paper suitable for use as covers of books, circulars, catalogs, pamphlets, etc. Many kinds of cover papers are used for other work as well, so that the term is used to indicate stock of certain characteristics, rather than for cover use exclusively.

Creasing—The use of creasing rule to mark cardboard or heavy paper so that it may be folded along the line without cracking, wrinkling or breaking.

Creasing Rule — Rule used for scoring or creasing. See above.

Credit Line—When an extract or article is reprinted, the name of the publication from which it is taken, or the name of its author, when put at top or bottom, is called the credit line.

Crowded—Type set close.

Illustration of a Cut

Cut—Any kind of an engraving or block used for illustrating or decorating. An electro of a type form, while it is a plate, is not strictly speaking, a cut. See definition of electro.

Cut-Outs — Irregularly shaped pieces of printed matter, usually cut out with steel dies, altho sometimes made with steel cutting rule.

Cutter—Applied both to the machine which cuts, and to the person who does the cutting. See Paper Cutter, Rule and Lead Cutter, etc.

Cylinder Press—A press having a cylinder which carries the paper or card stock over the flat bed of the machine, in which is fastened the chase. This same term may be applied to presses which print from curved plates mounted on cylinders, such as newspapers, but is usually confined to flat bed presses described above.

"D"

Dagger—One of the reference marks (†) furnished in fonts of auxiliary characters.

Dandy Roll—In paper making the cylinder under which the wet paper pulp travels, and on which, when bond paper is being made, the trade name or watermark is carried, and impressed in the paper.

Dash—Horizontal lines (—) used both between words and between lines of type. Not to be confused with hyphens (-). Also made in ornamental and fancy styles for use in separating parts of printed matter.

Dead Matter—Type in a form or otherwise which has been used, and is ready to put back into the case. A form which has been run one or more times, and is being kept for future re-runs is NOT dead matter.

Deckle Edge—The rough, feathery edge on some kinds of paper. A genuine deckle edge is caused by the process of making the paper. The paper comes from the machines in a continuous strip, the outer edges of which are deckled. Handmade paper has a deckle on all four sides, being made in sheets instead of continuous strips. The popularity of deckle edges for some work has caused paper companies to make paper with an artificial deckle, much of which is easy to detect if the appearance of the true deckle edge is known.

Dele—Abbreviation of delete — see below.

Delete — Verb meaning "take out," as used by proofreaders. See the list of proofreaders' marks in Lesson 9.

Descender—That part of lower case letters lying below the common line of the type's body. The letters y, p, q, etc., have descenders.

Detergent—Cleaning solution or preparation for making such a solution. Our cleaning preparation is a detergent.

Devil—The printer's devil is the boy in the shop who does the odd jobs and runs the errands. Like all boys, (and grown-ups, for that matter) printer's devils have their failings, hence the lack of respect implied in the term.

Dextrin — Substance used in making gum for envelopes, stamps, labels, etc., a starchy adhesive made from the sap of certain plants.

Die-cut—Cut out paper or cardboard through use of metal (steel or brass) either in rectangular circular or any fancy shape. Die-cutting may be done on a printing press with steel cutting rule.

Dieresis—Accent mark consisting of two dots (as in ö of coöperate) to indicate pronunciation.

Die-stamping—Printing and embossing through use of dies which make an embossed impression, and which also, by means of ink forced into the depressions of the die, print the words or design as well. All plate engraving is a species of die stamping, although on cards, stationery, etc., the embossing may not be very prominent.

Die Sunk—A panel, such as on wedding announcements or panelled cards, made with a die or block.

Diphthong—Joined together letters such as æ, œ, formerly used in such words as æolian, but more or less discarded in everyday work. Some faces of type have these diphthongs, others do not.

Display—That portion of a job, which is given prominence by the use of larger type, or with the use of white space around it, etc.

Distribution—The return of type, leads, furniture and all material used in a printed job to their proper places in the cases, etc.

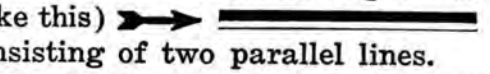
Ditto—Sign meaning "same as above" (").

Dodger — A handbill, usually printed on cheap paper.

Dotted Rule—Rule with dotted face (.....).

Double Dagger — A reference mark (‡), put up in the fonts of auxiliary characters.

Double Leaded—Work spaced between the lines with two 2-point leads.

Double Rule—Rule having a face (like this)  consisting of two parallel lines.

Drawsheet — The top tympan sheet on the press.

Drier—A substance used in inks to make them dry faster.

Dummy—A general layout for a booklet or folder, or a preliminary sketch of any printed matter.

Dump—Place where type matter and forms are put which have been used and are ready to be redistributed to their proper places.

Dwell—The short pause made by the form when in contact with the paper, on a platen power press.

"E"

Edition—Each separate printing of a newspaper, magazine, book or any printed job is an edition. In book printing they may be referred to as impressions or printings.

Editor—In addition to the commonly understood definition, there is that one which defines as an editor any one who prepares or revises (that is, edits) matter for publication or printing. You will sometimes hear, "That will require a little editing," which usually means changing through revision, modification, abridgment, etc. Go-

ing back to the more common definition: in old days the editor usually was supreme, often publisher as well, but nowadays the publisher is often the owner, a separate person from the editor, who is often a hired man or employee.

Editorial Matter or Editorial Contents—Not to be confused with the editorials or the editorial page of a publication. A publisher or printer when speaking of the editorial matter refers to all of the contents except advertisements, in other words, that part which the editors furnish as contrasted with that part which the advertising department sells to advertisers.

Eggshell—A finish on some book papers, which as the term implies, resembles eggshell. Such paper is often spoken of as antique finish. It is used very generally for book printing and for some magazine work. It should not, however, be confused with newsprint, which is much cheaper, and which is used in some of the cheaper fiction magazines.

Electro or Electrotype—A plate with copper face and lead back, mounted on either metal or wood—usually wood—made by electroplating a copper shell on a wax impression of a type form, cut, or combination of both. Electrotypes are also made moulded in lead instead of wax, and with nickel face (nickeltype). Before the wax is plated it is covered with plumbago (called black lead, but actually a graphite compound) to make the wax a good conductor of electricity. Electros should not be confused with the original cuts or engravings, from which electros are made. It is not possible to make an electro direct from a picture, because electrotyping is a moulding and electroplating process, not a photographic method. Electrotyping is used to produce duplicates of plates, cuts, or type forms, so that more than one may be printed at a time, or in the case of stock cuts, the duplicates may be sold. Electrotypes are also made so that the original form or engraving may be preserved and not subjected to the wear of being actually used on the press.

Ellipsis—Indication, usually in the form of several periods (. . . .) to indicate omission of a word, sentence, or more from the original manuscript. Also used in stories to indicate a lapse of time.

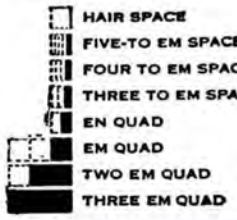


Illustration at right shows relative sizes of spaces & quads

Em—The square of any size of type. Thus, a six point em is six points wide, an eight point em is eight points wide, etc. Printers are also inclined to use the term very loosely for column and other widths, in which case they refer to 12 point, or pica ems. Thus, if a column is said to be 12 ems wide, (as this column is, for instance) it is meant that it is 12 pica ems wide, or more simply, 12 picas. On the other hand, since this is set in eight point, there are actually eighteen 8 point ems in a line of this length. The printer, in speaking of it, however, would call it a 12 em width. If he were measuring the amount of type in it, however, he would revert to the correct size, and say that it contained 18 ems. Em dashes and em quads are dashes and quads an em in length—that is, cast on a square body.

Embossing Press — A machine made especially for embossing. Embossing may also be done with regular printing presses.

En—One half of an em. En dashes and en quads are cast on a body one half as wide as the size of the type —thus an eight point "nut" quad, as old printers call them, is 4 points by 8 points in size.

Enameled Paper—Generally the same as coated paper, already described, altho when there is a distinction made by the paper company, the enameled is the better of the two. See *Coated Paper*.

English Finish—A smooth, soft finish on paper which has largely supplanted the old machine finish (m.f.). Our standard white paper is "e.f."

Engraving — Printing from an engraved plate as contrasted with ordinary printing which uses raised letters. In standard printing the paper receives the impression by contact with the ink on the surface of the type or design. In an engraved job, the paper is forced down into the depressions of the plate, from which it takes ink which has been previously rubbed into the engraved lines. This pressure causes the embossed appearance which is so often visible on the back of engraved work. Engraving is a slow process, and consequently much more expensive than printing. Before each impression, ink must be forced into the lines of the plate, and the surplus ink on the surface of the plate carefully wiped off so that none of it will soil the stock to be printed. An engraved job has a rough feeling to the touch, as the ink lies on the paper thicker and heavier than in ordinary letter press printing. Plateless engraving produces this same effect by regular printing and the use of a compound on the inked surface which raises it. The word is often used also to denote any kind of illustration or cut, such as used in a regular printing press.

Engraving Blocks — Blocks on which designs for printing are engraved.

Engraving Tools—Tools used for engraving designs on blocks of wood, linoleum, rubber, etc.

Expanded Type — Type with a wide body, as contrasted with type

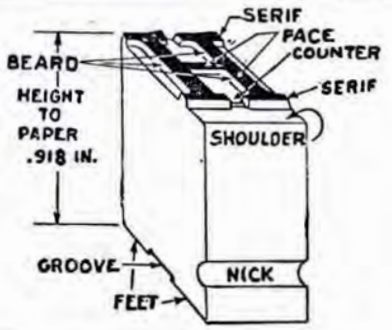
THIS IS EXPANDED TYPE

having a narrow (condensed) body. Copperplate Gothic is an expanded face.

Extended—Same as expanded.

Extension Cover — Cover on booklet, catalog, etc. slightly wider and longer than the rest of the book, overhanging or overlapping, as it is sometimes called.

"F"



Face—That part of the type or of a plate which comes in contact with the paper; the printing surface. See diagram of type above.

(To be continued)

LESSON EIGHT

How To Set and Handle Body Type

Instructions for preparing your composing stick for setting type will be found in lesson one. We'll assume you are going to start with straight matter, that is, solid work without display. Hold your stick as shown in the illustration, and proceed as follows.

Between each word place a 3 em space, or if you are going to set your work a little closer, which is often done nowadays, use a 4 em space. Read a few words of the copy ahead, so that you don't have to glance at it for each single word. Check the line for mistakes before you respace it. Another spacing method is described in lesson one. When you are at the end of the line, if you find that you can divide a word between syllables and put the first part on that line, do so, except that a word consisting of only one syllable should not be left by itself. (That is, words like alone, about, etc., cannot be divided.) If another word or syllable can be gotten on the line by reducing the space between the words in that line, replace as many of the spaces as necessary with the next size smaller (4 em for 3 em, or 5 em for 4 em) or if that is not possible and there is some space remaining, use thicker spaces. Leave no space at the end unless it is the finish of a paragraph, and do not divide the last word of a paragraph so that there is nothing on the last line but one syllable. Space out the preceding line so that the full word is on the last line.

Using a Composing Stick

When respacing take full advantage of the appearance as well as the actual spaces used. Letters with parallel parts to them such as l and h need thicker spaces between them than T and A if they are to *look* equally spaced. Capital letters are particularly subject to such adjustments. Don't put heavy spacing at one end of the line — spread it over the entire line. While you will probably start your paragraph with an em quad, and you can use the same after a period, colon, exclamation point or question mark, you can, for close spacing use an en quad after a period, taking advantage of the white space above the dot. In the same way, where a comma appears in the text, if you are cutting down to thinner spaces you can take more out, but if you are adding space, less should be placed after it. Attention to little details like this will greatly improve the appearance of your work.

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Here are a few ways by which your spacing can be greatly improved:

a. Use a smaller space after a comma than otherwise between words.

b. Do the same if a period is used for abbreviation purposes, but not if it is the end of a sentence.

c. Use a large space after a semicolon.

d. Use a thin space between a word and an exclamation point, interrogation point, colon or semicolon unless the last letter of that word itself has sufficient space around it.

e. Use a thin space between quotation marks and the word quoted unless it is followed by a period or comma. Use one on each side of a dash, unless it follows a period or comma.

f. Short words like of, a, the, and, etc., should have the same spacing on each side.

g. Try not to have unevenly spaced lines — wide spacing on one, thin spacing on the next. Usually such lines can be evened up by carrying over or pushing back a word or syllable.

h. Where possible, don't have the same word at the beginning or end of two successive lines.

i. Avoid divided words on two or more successive lines. The hyphens in a row do not help the appearance of the composition.

j. All-cap lines should be wider spaced than normal cap-and-lower-case lines. Extended styles of type require more space than ordinary. All cap lines are difficult to read unless properly spaced. Some typographers recommend two three-em spaces for caps, but the appearance and shape of the letters must be taken into consideration, and spacing made accordingly.

k. Extra leads between the lines call for wider spacing between words to preserve the balance of the composition. Approximate leading should be determined in advance so that spacing can be handled accordingly.

l. Wide spacing will make the use of a thin space on each side of the hyphen in a hyphenated word useful to preserve good appearance. Punctuation and dashes should likewise have more spacing, depending on appearance for the exact amount.

m. Long lines give more opportunities for respacing to avoid use of hyphens, and full advantage should be taken of them. Just as in short lines it is poor taste to leave a one letter syllable by itself on a line, wide measure work should be respaced to avoid leaving either one or two letter syllables.

n. Italic type requires a little wider spacing than upright or roman. The irregularity of the letters need varied spaces for good appearance. When respacing, watch letter shapes and add or subtract only where it will do the least harm.

o. Avoid having the last line of a paragraph full length. Respace it so as to give as much contrast with the full length lines that precede it as possible. However, a three or four letter word on the last

line of the paragraph, all by itself is not good. This can often be foreseen as you set the previous line, and thinner spaces used so as to make it unnecessary.

All of the above is based on a first class job of handsetting. A composing machine, like a linotype, mechanically makes the space equal between every word in the line, but in doing so entirely disregards the APPEARANCE of equal spacing which can only come from observance of the suggestions we have made. You as a printer will have to decide for yourself how far you want to go toward perfect spacing. Some jobs may not be worth it, others more certainly are. The craftsman or organization which does the highest grade of work very often has the best customers, and lifts himself out of cheap competition.

Leads are used between the lines for spacing them out. The most common size is two point, although one point may be used instead, or the lines may even be made up without them — set solid is the printer's description in that case. While it is advisable to either use or not use them throughout on a particular section of type, leading can be varied within reason to make the text conform to available room. When using variable spacing between lines, the same rule applies as between words — appearance must be the guiding factor. For instance, if a paragraph ends in a short line, the apparent spacing is likely to be greater than it really is, and if leads are being removed to close up the type, they can be left between that line and the next paragraph, or a one point substituted for the two point.

On the other hand, if the copy being set is such that it will not detract from appearance, you can put more rather than less space between paragraphs, especially those having a long last line before the next paragraph. Leads can be used between headings, and space can be used up in other similar ways. For instance, the beginning of the article can be given wider spacing than the balance. You'll often see that done. Space can often be placed to advantage between display lines. Where greater spacing than 5 points is needed, six point lead slugs (same as leads but six points thick or more) can be used.

If you piece out the line with long and short leads, don't forget to alternate long and short in each line, so that all the short leads will not be on one side, nor the lead ends come in one spot. Unless you do, the column may split at the joints when handled, and a bad case of pi result.

Setting Display Type

Generally speaking display type is centered, although in present day layouts that is not always the case. Where it is, be sure to get the same amount of space on each side, and this can best be done by using the same size spaces and quads on each end. Put the spaces and small stuff next to the type, the quads at the outer ends. Periods are not normally used at the end of display lines. The most important part of such work is to give an appearance of being centered. Usually, because of this, quotation marks can be disregarded when centering — in other words, they may be treated as so many spaces of the same size.

However, when the job is proved up it may be necessary to make adjustments for appearance.

More complete discussions of layout, design, and typesetting will be included in later parts of this course.

To handle the type easily and safely, lay the composing stick on a flat surface, with the open end away from you. A little water sprinkled lightly over the type will help it to hold together.

This cut shows method of lifting and handling lines of type. Place a lead, rule or reglet (rule is best as it does not bend and is full

How to empty a stickful of type

height of the type) on each side of the lines to be lifted, place the first fingers at the head, the thumbs at the foot, the second and third fingers at the ends and, pressing firmly together, lift carefully. When clear tip all on edge, facing you, turn feet down again just as you place in the galley or form.

Tying Up A Form

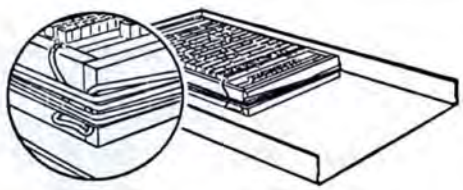
Curiously enough a form can be easily wrapped with string in such a way that it will hold together when it is lifted, and this is usually done when the job is ready for taking a proof, as well as after the complete printing job is done, if it is to be laid away for running again. A form properly tied up is shown in the illustration. Wind the string clockwise, and see that the successive turns go over the end of the first one. Keep the string tight as you wind. Use six to ten turns. The form should have pieces of wood reglet at top and bottom before the string is placed on it. Tuck the end of the string in as shown, which will make it easy to unwind when you want to use the form or throw it in the case.

Narrow Widths in Your Composing Stick

Some printers, when setting very narrow widths in the composing stick, prefer to leave the stick set to a normal measure, and fill up the balance to the necessary column width with big quads. They claim it is not only easier to set, but also considerably handier to remove the lines after they are done.

Making Up Forms to Print More than One Color

We are illustrating here a form both complete and as it is made up for each of two colors. Number one shows the entire job, the lines in the center being supposed to represent lines of small type. You will



A form properly tied up

note furniture around the cut just above the small type. That shown is metal furniture, which is particularly handy in such a spot. We will assume that we want to print the border and the cut in a different color from the rest of the job. It will be best to get a proof of the whole thing in one color first, as a key impression. You can then unlock the form, and lift out the

Figure 1

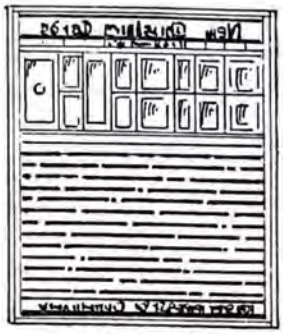


Figure 2

Figure 3

How to print two colors from one form.

cut, substituting a piece of furniture or a block of wood of equal size. Take out the border and put lead slugs or quads in place of it. Relock the form in the chase, and you are ready to print the first color.

When that is done, reverse the process, and you will have a form like number three. This will assure a perfect job on both colors. The advantages of this will be more apparent on a job with a number of lines of type of different color scattered through the form, where perfect register is necessary.

Making Good Joints In Rule

When rule is used, extra care should be taken to make the form straight and true, otherwise rule joints will be hard to match up, and if there are miters you'll experience difficulty in getting them together.

If the form is properly locked, and you still have trouble look to the smoothness of the form. Perhaps it was not properly planed. Possibly one piece of rule is more worn than the other or one is a little off its feet.

One way to correct a poor joint is to make an impression on the top sheet of the platen, then paste a very narrow strip of french folio, manifold or other hard thin paper diagonally across the impression of the break on the tympan sheet. One is enough — more will make it worse.

If the above doesn't quite do it, take a fine rubbing or scotch stone, and rub with a circular motion over the face of the rule at the joints. If carefully and properly done, a good joint should result.

Other printers recommend loosening the form and inserting a piece of light or medium tag board to a depth of about a half inch in the point. The form is then locked up again, and the tag trimmed close to the rule on both sides, but with about one point of the stock ABOVE the face of the rule. It is claimed that in eight or ten impressions this fibrous brush will collect enough ink to completely hide the joint.

Another remedy used by some printers is to force warm beeswax in the joint, and wipe off the rough edges. The wax will furnish a good surface for the ink, and, if properly applied, will give satisfactory results.

More information on making Rule Joints in Lesson No. 19

How to Print in Two Colors Without Using Two Forms

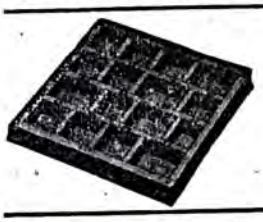
Very often the following method of color printing will save you the time of making up a second form for your lines or cuts in color.

Lock up the form in the regular way, as if for one color, and set your gauge pins—get all ready to run. Take the chase out of the press, and lay heavy cardboard under the matter to be printed in color, at the same time taking an equal amount of cardboard out of the tympan padding in the same spots. Loosen up the form enough so that you can plane down the type and material which does not have cardboard under it, then tighten up again. This will leave the part to be printed in color just a trifle higher than the rest, and if you handle it carefully, possibly using roller supporters to keep the rollers level and off the rest of the type, you will be able to print your color. For the black or the other color, reverse the process—that is, raise the lower parts, and lower the raised parts of your form.

Thin Spaces

Lines of type which are not properly justified (spaced out) will make any type form extremely difficult to handle or to lock up in the chase, yet sometimes the ordinary spaces seem hardly small enough. A supply of 1 point brass and ½ point copper spaces in the various sizes will provide just what you need in such cases. You can then make your lines so exactly spaced that when you lock up your form in the chase you will not find some lines too loose and others too tight.

Thin space cases are made to hold a supply of all sizes, both ½-point and 1-point in thickness. Whether or not you use the larger sizes often or not at all, the various sizes of brass or copper will help you in justifying forms, filling mortised cuts, etc.



Thin Space Case

Most printers keep the case with its thin spaces at hand while setting jobs, so that no time will be lost looking up the box or the spaces. It is also usually the practice to keep spaces and quads of the regular size in separate cases made especially for the purpose, so that it is not necessary to keep, for instance, 8-point spaces and quads in the several cases in which you may have that type. In other words, it concentrates all the spaces and quads of one size in one place, so that you can use them to the best advantage without hunting around in more than one case for them.

When this is done, it is necessary to have only one case for the thin spaces, and a case for each of the sizes of regular spaces and quads (6-point, 8-point, etc.). Such a concentration of spacing material in one place will usually pay for itself in time saved, to say nothing of the advantage of knowing just what you have at all times without looking in half a dozen different cases.

Don't Mix Spaces and Quads in a Line Any More Than Necessary

When spacing out the last line of a paragraph, title lines, or in

any spacing which requires several kinds of spaces and quads together, make it a practice to put the largest quads or spaces on the outside end of the line. It will not only prevent the smaller pieces dropping out or falling over when you are handling the form, but it will also be easier to put the material back in the cases if you know without looking that the smaller spaces or quads are nearer the type, and the bigger ones near the edge. This is common printing practice, but is sometimes lost sight of in a rush of work.

Lesson Eight—Questions

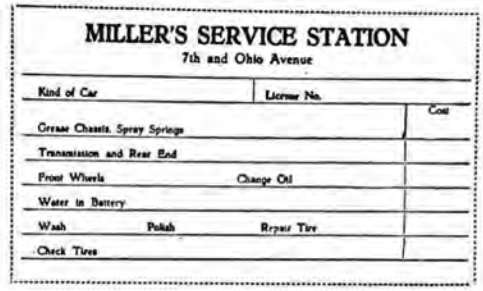
1. *Tell in detail how you would set solid type matter.*
2. *What modifications can be made in spacing which will improve the appearance of the work if you have to respace?*
3. *How can the use of leads be varied to add or subtract space without its being apparent in the finished work?*
4. *Describe in detail how you would set display lines, with particular reference to the difference in treatment from body or solid matter.*
5. *How should a form be tied up?*
6. *What can you do to a type form which will make picking it up easier and safer?*

The Printer's DICTIONARY

"F"

(Continued)

Family—Several series of type having many characteristics in common, so that they are often used together to produce harmonious work. For instance, Goudy Old Colony and Goudy Old Colony Bold are all related and go particularly well together; Caslon and Caslon Italic are particularly well matched; Continental and Ad-News Condensed are of the same family, etc.



MILLER'S SERVICE STATION
7th and Ohio Avenue

Kind of Car	License No.	
		Cost
Grease Chassis. Spray Springs		
Transmission and Rear End		
Front Wheels	Change Oil	
Water in Battery		
Wash	Polish	Repair Tire
Check Tires		

Facsimile of a piece of printed matter, reduced in size

Facsimile—A reproduction of a clipping, signature, piece of printed matter, letter, etc., usually made as a line etching.

Farm Out—To have all or part of the work done by another printer.

Fat—An old term, used in the days when compositors were paid "piece work," which indicated work which was easy setting, through much leading or otherwise.

F.C.—Follow Copy.

Feed Edge—The edge of the paper or card stock which is set against the gauge pins or guides.

Feeding—Placing the sheets in the press in the proper position for printing.

Feet—The points on which the type stand. Without these so-called feet, type would pi much more easily. Type that does not stand perfectly erect prints on one edge and not the other (due to poor justifying of the line or lockup), is said to be "off its feet."

Felt Side — The smoother side of a sheet of paper, often called

the right side. In paper making one side of the sheet is in contact with a wire screen, and is called the wire side; the other being in contact with the felts, is called the right, or felt side.

Fingers—Grippers.

Fist—An indicator in the form of a pointing hand (☞). Furnished in fonts of auxiliary characters.

Floret—Type in the shape of a flower or leaf, for decorative purposes.

Flush—Type set without indentations.

Flush Trimmed—Paper bound publication or book with cover and inside pages the same size, usually accomplished by putting on paper or cardboard before trimming.

Flyleaf—Blank sheets at front and back of book or pamphlet.

Font — An assortment of one style and size of type in the proper proportion to be of most use for the average job of the average printer. This proportion, or scheme, as it is called, has been developed from experience over a long period of years, and is approximately followed by all type founders, making due allowance for the size of the font, etc. In actual practice it is not possible to furnish a font in a scheme which will exhaust the supply of all letters at once, because the kind of work for which the type is used varies much more widely than is realized by most people. In the larger fonts the capital letters and the small or lower case letters are put up in separate packages so that they may be bought separately, and in weight fonts a further division of the figures and the points (Periods, commas, etc.) occurs. The word font (or fount, as it is still spelled in England) is supposed by many to have originated in the days when each printer cast his own type, and had but one style, the type of no two printers being alike, hence his work could be identified by his type. When these medieval printers needed type, they drew it from their own source (or fountain) of supply. Thus came the origin of the printer's "fountain" (fount, font) of type. Presumably, if the fountain was dry, the owner had to get busy and make up a new supply.

Form—Any kind of assembled material ready for printing, that is, the actual type, plate or combination of both from which the printing is to be done.

Fountain—The device used to hold and supply ink for the press. Fountains are very seldom used on hand presses or on work on larger job presses which call for short runs. The ink fountains listed with the power machines can and have been applied to the hand presses, but are hardly necessary or advisable.

Four Color Printing—Printing from four plates, one each respectively for black, yellow, red and blue inks, the plates being so made that combinations of these colors will furnish all the intermediate colors and shades. Such plates are of necessity extremely accurate in register and correspondingly expensive.

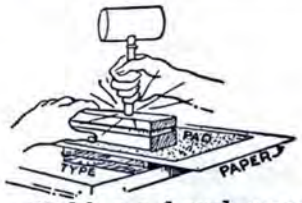
(To be continued)

LESSON NINE

Various Ways of Taking Proofs

The surface on which the type is laid for proof should be absolutely smooth and free from specks or other dirt. On hand presses with removable backplate like the Excelsior, the plate can be used for proof taking, either in or out of the chase. In most plants the imposing surface is either of stone, such as marble, or iron. Whether the surface is of stone or metal, it is called an imposing stone, and taking a proof on it is called taking a stone proof.

The type form is placed face up on the stone, and ink applied with a hand roller or brayer. Be sure



Taking a hand proof

to ink it thoroughly and evenly. Lay the piece of paper on the form carefully, so that there will be no slur.

If you are using a wood-surface planer, lay a piece of felt over the paper, again being careful to avoid any movement on the form. If you have a felt-surface proof planer, place that carefully on the form. Be sure that the bottom of the planer is entirely free from dirt; this can be done by running your hand over it before you set it on the form. Tap the top of the planer sharply with a mallet — either the head or the end of the handle. The handle end is safer, because there is less likelihood of a glancing blow being struck, which might cause the paper to shift a trifle and blur the impression. Pick the planer straight up, for the same reason, and lay it on another part of the form, repeating until the form has been completely covered.

Peel the paper very carefully from the form. Clean the form well with brush and cleaning solution in the regular way.

Newsprint is generally best for proofs, as it absorbs the ink, although other grades of book papers may be used. Some prefer French Folio, a thin glossy sheet. If the paper is very slightly damp — not wet — pulling a good proof is easier. Where a proof press is available, the procedure is much the same, except that the form is laid on the bed for the proof press. It is then inked as already outlined, the paper laid on, and the roller of the proof press run over it. Some proof presses depend on the weight of the heavy roller to make the impression; some are geared at the sides to prevent the roller sliding; others have hard rubber rollers or rollers made of a similar substance, which are held to the bed of the press through trucks in such a way that pressure is exerted on the form. Some proof presses are equipped with grippers and gauges, for better making of two or more color work. There are some proof presses on the market which are so elaborate that they are in effect good short run four color process machines, but with these more complicated mechanisms we are not concerned at the present time.

Proofs may be taken in a galley on a wood surface if it is a stout

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one, and, of course, large numbers of them are made on the imposing stone without removal from the galley. Many proof presses have what are called galley thickness bed plates, so that if a proof direct from the galley is wanted, this plate may be removed, and the extra thickness, which would otherwise make a proof impossible on rigid roller machines, is thus compensated for. Proofs taken in the galley are, it is perhaps unnecessary to add, called galley proofs, and are the most common form of proofs. Frequently such proofs are used in pasted or pinned up form to make a layout or dummy of the work in process.

Securing A Form In the Galley For Proving

The form may be tied up as described previously for proving, or it may be done in the following manner:

The form being in one corner of the galley, and the galley braced at an angle so as to prevent pi, put a piece of metal or wood furniture the exact width of the form at the bottom, against it. Use long furniture on the other side — longer than the form itself — and fill the galley with it. Use leads, slugs or reglets to make a snug fit, but not one which will bend or spread the galley. The galley may then be put on a flat surface, to make a proof, or for any other purpose.

Correcting the Proof

You are now ready to go over your printed proof for corrections. Shown here are the marks used by proofreaders for designating changes. Most proofreaders draw a line from the point where the change is to be made to the margin where the correction is noted. There are, of course, variations in these marks as printers write or use them, but common sense should be the governing factor. If you are going to make your own corrections, the most important thing is to have the marks so that you can understand them. If you are a proofreader, and somebody else does the actual work, it is important that you make your notations so they will not be misunderstood.

A Proof Press

There are a lot more things than obvious typographical errors to look for when reading proof. Assuming that the copy from which you set your work was carefully written to avoid small letters where caps would be more appropriate, or the reverse, and that it is entirely correct in its punctuation, so that you can rely upon it, you will check your proof against it for punctuation, spelling, the proper division of words where they run over from one line to another, uniformity (as for instance, the same amount of indention), good spacing and the like.

This will be in addition to such things as wrong font letters, damaged letters, omissions, duplications, transposed letters, and the other things which the proofreaders' marks suggest.

Proof Readers' Marks

✕ Change bad letter	⊏ Move over
⊥ Push down space	□ Em quad space
9 Turn over	/—/ One em dash
⸗ Take out (*dele*)	/2—/ Two em dash
^ Left out; insert	¶ Paragraph
# Insert space	No¶ No paragraph
⌄ Even spacing	*wf.* Wrong font
⌣ Less space	..... Let it stand
⁀ Close up entirely	*stet.* Let it stand
⊙ Period	*tr.* Transpose
,/ Comma	*Caps* Capital letters
⊙ Colon	*s. c.* Small caps
;/ Semicolon	*l. c.* Lower case or small letters
✓ Apostrophe	
✓ Quotation	*Ital.* Italics
-/ Hyphen	*Rom.* Roman
≡ Straighten lines	

If the author of the copy has not been too careful with his copy, and you are in a position to bring the subject up without offense, the matter of punctuation and capitalization with a view to uniformity can be given attention, although it would be better and save time if this were done before setting the type. Straight body matter will not require so much tailoring as programs and other job work in which the customer is prone to toss off the copy rather haphazardly, with much confusion in the use or non-use of caps and punctuation. Even good writers are likely to be careless, and if the printer does not look out these lapses will be corrected by the customer after the job is set, with consequent additional costs which he may not willingly pay. Better look the copy over first, have an understanding with its author, and save unnecessary time and expense. If you're setting up your own copy you'll find it just as worth while.

Be sure that all the indentions for the paragraphs have been made and are of equal size. A ruler placed on the page so that it intersects each indention will show up any variations, but will not catch complete omissions.

See to it that the divisions of words are correct. This may be easier to do at one time, running your eye down the column and checking them. You can check this first or last, but in any event, don't forget it. Use the dictionary for this purpose.

Proofreaders in establishments doing only high grade printing are required to look for and correct a great many things that in the ordinary run of commercial printing would be passed by without remark. It will do no harm to check over a few of these. You

can then form your own conclusions as to how far you need to go.

On a fine piece of typography much effort will be spent to eliminate "rivers", which are gullies of white space which seem to form continuous passages through the text. They are, of course, accidental, and can be removed by respacing. Rivers may be almost vertical, or they may be diagonal. In either case they are undesirable.

Really competent proofreaders watch not only for typographical mistakes and undesirabilities but for errors of fact, sentence constructions which are awkward, and which do not make the meaning of the writer clear, or which may be taken two or more ways. Clear typographical mistakes are marked for change, but other questions, which involve meaning, grammar and the like are marked on the edge of the proof with a question mark, so that the original writer or author can either OK or reject them. A proofreader who is able to handle the grammatical and factual part of the work efficiently is the product of long years of experience, plus much reading. Ordinary typographic proofreading can be picked up without so much difficulty. Just how far you want or need to go in proofreading you can decide for yourself.

If you go into proofreading for a profession you will find that all you know about everything, including history, geography, literature, languages, movies, radio, advertising, sports, travel and your wife's aunt will go toward making you efficient in your work. All knowledge will help you as a general printer. The more you know the better you will be, as either a printer or proofreader, but as a printer you can read your own proof if you have average intelligence, and are willing to learn.

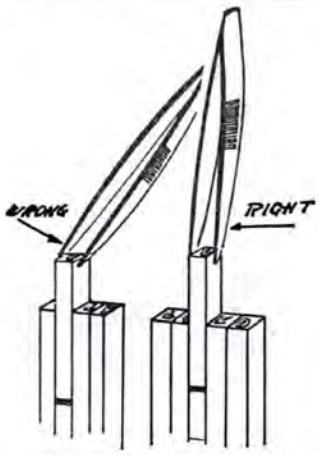
You'll find if you work in more than one print shop there is a lack of uniformity in office styles, as they are called. The variations will crop up in nearly everything on which there is any room for difference of opinion, even including spelling. Some places have a style book in which the rules and regulations are set down, where they can be consulted in case of doubt.

The customs of some printing houses in that regard reflect the leanings and prejudices of the owners or managers, but if you are working in one of them, their style must be observed. Grammatical usages change over the years, and what would have been dead wrong or of doubtful taste a short time back may be the alternative or even preferred way now.

Since that phase of proofreading is more or less fluid, to say nothing of controversial, it has no place here. If you are working for others, you will be guided accordingly. If you work for yourself, you'll pick it up as you go along. The questions which may come up here are numerous enough to fill the dictionary and the grammar combined, and most of the answers which are down in black and white will be found in those two books, as well. Matters of opinion and judgment will be up to you in the light of your own good sense.

Making the Changes In the Type Form

To get at a letter which must be changed, raise the whole line by lifting first one end and then the other. If only one character needs to be changed, you can hold onto it while you shove the rest of the line back. The most important point in that case is to keep the line the same length as it was before. When you replace a character with another of exactly the same width, nothing need be done about spacing, but if it is not exact, the line must be respaced. The safest way is to take the line out and put it in the composing stick, then it can be handled easily. If more than one correction is to be made, putting the line in the stick is advisable anyway, due to the likelihood of uneven spacing otherwise. The only exception is on a job with figure changes. Most styles of type have all figures set on the same width of body, so that they can be easily altered.



SHOWING HOW TO GRAB TYPE WITH TWEEZERS. TOO CLOSE TO FACE OF TYPE IS LIKELY TO DAMAGE IT IF TWEEZERS SLIP AND SNAP OFF.

If words have to be added, so that the line overruns into the next one, you will, of course, need to justify this and any changed lines in the composing stick. If a word or words are to be removed, you'll want to respace properly, and that may mean bringing back one or more words from the following line if spacing out in the same line will cause overspacing.

Making A Revised Proof

After the corrections have been made, another proof, called a revise, is pulled, and this proof, after checking, can go to the customer. If the customer is not to see the proof, it should be gone over very carefully, because this will be the last time to catch errors. The next step, after all corrections are made and checked, is to lock the form in the chase.

Correct Spelling Of Firm Names

If you are doing a job for a firm, and printers are not guiltless of such mistakes, be very careful that you get the "firm style" correct, that is, the exact wording, including punctuation, of the firm name as it is used by the firm itself. One of the most common errors in newspapers is the use of "Co." when it is a "Corp.," the omission or addition of an "&," "The," or some similar careless handling of names which they are using, and while some people don't care how they are labelled, most firms of any size do, and many small fellows are even more touchy. The addition or omission of a comma sometimes causes trouble. If the name has the letters "Inc." after it, ascertain whether a comma goes between the

"Inc." and the rest of the name. If you are handed a piece of printed matter by the customer, verify the correctness of the firm style with him, because the previous printer may have made a mistake. Many concerns are incorporated, but don't use the word in their name, ordinarily. Some states have strict rules about people calling themselves a "Company," requiring the words "Not Incorporated" to be used after the "Company" unless the concern is actually incorporated.

A reputation for getting small things right will help you to get business.

"Mr." Or Not?

A student writes:

"Today I was in hot water, so as to speak. A customer said I had ruined his cards by putting "Mr." before his name. I have been in the habit of using "Mr." on short names or small type to balance the line. My customer tells me that this is positively wrong, improper, not used and several other expressions not fit to repeat. I told him I could see no reason for not using it."

The use or non-use is partly a matter of preference, and partly a matter of formality or informality, mostly the latter. A gentleman's formal visiting card carries "Mr.", and whether it should be used on a greeting card depends on how formal the sender wishes the card to be. Business cards almost never carry "Mr.", and the use of it in signing a letter shows either ignorance or juvenility.

In the printing of greeting cards it might be just as well to ascertain the wishes of the customer beforehand, so as to prevent trouble after the job is done. You will probably find a greater portion of those preferring it are getting cards for man and wife — "Mr. and Mrs." In that case the prefix doesn't look quite so stiff as when used for a single man.

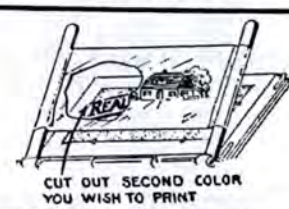
Lesson Nine—Questions

1. *Describe the various ways of taking a proof.*
2. *What is the most important thing in marking up a proof?*
3. *What must be looked for aside from ordinary typographical errors, such as wrong font letters, misplaced letters, etc.?*
4. *What does a really good proofreader have to know?*
5. *Describe the actual making of corrections in the type — how it is best done.*

The Printer's DICTIONARY

"F"

(Continued)



Frisket—Paper pasted on the grippers, with a hole cut in it to allow only part of a form to print. Friskets are used for many purposes.

Full Face ▬

Full Face—Bold or black faced type, also heavy rule which prints the full size of its body.

Full Stop—Period.

Furniture—Wood or metal blocks used to fill out forms of type,

plates, etc. Wood furniture comes in yard long strips which may be cut up by the printer to any desired size, or it may be bought in handy fonts or assortments all cut to standard sizes. Metal furniture comes in standard sizes, and has the added advantage of long life and absolute accuracy under all conditions.

"G"

Galley

Galley—A tray having three sides to hold forms, set-up type, etc.

Galley Proof—A printed proof taken by hand, of type in a galley. Usually such a proof is taken, and then pasted up in dummy form (see *Dummy*); the actual making up of the form being done from this dummy.

Gang Printing—Printing more than one job on the same sheet.

Gathering—Collecting sheets in correct order for binding or padding.

Illustration shows how gauge pins are used to hold paper or card in proper position on the press while printing.

Gauge Pins—Small devices which are pinned into the tympan padding, and against which the sheet of paper or card is fed into the press. Gauge pins are set so that the proper margin will be made on all sides, and that each sheet or card will have the same margin. Two gauge pins are used at the bottom, and one on one side, or a total of three. Some printers use quads pasted on the tympan as gauges, and others use various devices, but gauge pins are the most common.

Gold Bronze—Powder used to make a gold effect. Printing is done with gold size, a yellow substance, in place of ink, and the bronze is dusted on before the size has dried.

Gold Size—Ink made sticky so that gold and other powders will adhere to it better.

Good Color—A job printed with enough, but not too much ink, is said to have good color. Used in reference to black ink, as well as colors.

10 Point Cable

10 Point Gothic

Gothic — In this country, type without serifs (cross pieces on the ends of the main stems of the letters) and with all strokes of the letters of about the same thickness are more or less mis-called Gothics. Abroad these styles are called Sans-serif type, and since the introduction of the modernistic faces, the term Sans-serif has been applied in this country, but mostly to the newer faces of that kind rather than to the older ones. The Copperplate Gothics are not strictly Gothics, as they have a very slight serif on them, in facsimile of the minute serif left by the engraver in making copper plates. Below are so-called Gothic and Sans-serif letters.

Gothic Flap — A deep pointed flap on envelopes.

Grain—The direction in which the fibres lie in paper or card stock. When folding is to be done, it is important to discover this, because the sheet will fold with less cracking with the grain than against it. Simply folding a sheet

first one way and then the other will determine the grain.

Graphic Arts—Term applied to all branches of the printing industry.

Gravure—See *Photogravure* and *Rotogravure.*

Great Primer—The old name for type approximating 18 points.

Grippers or Gripper Fingers — Flat metal rods or fingers which hold the sheet or card in place on the tympan while it is being printed, and prevent it from sticking to the type when the chase and the platen move away from each other.

Gudgeons — Roller Wheels

Guides — All gauge pins are guides, but not all guides are gauge pins. See *Gauge Pins.* Any devise for holding the paper or card in place on the press for printing.

Gutenberg, Johann—Born 1397, died 1468. While there is some controversy about it, Gutenberg is usually credited with the invention of movable types. His first book, the Bible, printed around 1450-55, is a most prized rarity, largely because of this.

Gutter — A white streak in printed matter caused by an accidental arrangement of words which brings them in line with one another and consequently makes the white spaces between them line up. Also used to describe the blank space between two printed pages. Same as River (see page 4 of this lesson).

"H"

Hairlines—The fine lines in type, as contrasted with the broader strokes.

Halftone—A cut made by the photo-engraving process, in which the photograph or job to be reproduced is photographed thru a fine-ruled glass screen, on a zinc or copper plate. The screen breaks the photograph up into minute dots, and the plate is later etched so that these dots form the printing surface. The screens used have 55 to 200 lines to the inch; the more lines on the screen, the smaller and closer the dots are together, the softer the picture, and the more difficult it is to detect

Fine Screen Halftone

the halftone from the original picture. The finer screens are also much harder to print from. A 120 line screen cut means that the cut was made thru a screen having 120 lines to the inch. 120 and 133 line screens are very commonly used. Newspapers take the coarser screens, because of the haste with which they must be printed, and the poor paper which they use. Coarse screen cuts are commonly made on zinc, finer on copper. Without the breaking up of the picture into the minute dots made up by the screen, it would not be possible to produce a plate which could be used on an ordinary press.

(To be continued)

LESSON TEN

PRINTING PROCESSES

Lithography and Offset

The introduction to this course made clear that we are concerned in our study only with what is called letterpress printing — that is, printing from raised letters, plates, etc. You as a printer or student-printer should, however, know what the other methods of printing are and for what they are used.

Lithography makes use of the unwillingness of oil and water to mix. Instead of a printing form of raised characters, the plate is absolutely flat, and formerly was a smooth slab of a certain kind of limestone, which takes grease and water equally well.

The stone or plate is given a coating which it absorbs just sufficiently to give a surface on which the design or lettering may be drawn, traced or transferred. The coating takes water but repels ink. The lines of the design repel water, but take ink, so that when the ink rollers pass over the stone only the design is inked. The rest of the plate is kept damp. Before printing, the design is very slightly etched into the stone, but not enough to make any material difference in the height-to-paper of any part of it. Lithography is used for a wide variety of label, picture and calendar printing, but the larger part of it is offset lithography, a later development of the older stone method. Zinc and aluminum plates have also superceded stones for ordinary lithography, to a large extent.

From straight lithography has developed offset printing, in which the design is not printed directly on the paper, but instead on a rubber cylinder, which in turn transfers it to the stock being printed. Offset is a big industry. Another offshoot is the smaller equipment such as the Multilith, which uses the same principle. The cheapest offset presses, such as are found in some factory offices, cost several thousand dollars, so they do not compete with letterpress printing unless quite a fair volume of certain kinds of work is available.

Copperplate and Steelplate Engraving

In letterpress printing our printing surface (type, cuts) is raised. Copperplate and steelplate engraving uses the exact opposite — the lines or letters to be printed are engraved or cut into the plate. Ink is squeezed into the depressions, and the polished surface of the plate wiped to make sure no ink will remain on it.

Copperplate engraving is used for high grade announcements, invitations, cards; to some extent for stationery, and for other work in which cost is a minor consideration. Steel plates, hardened after being engraved, are also used, for instance on U. S. paper money and postage stamps, as well as bonds.

Printing is done on everything from a hand inked machine looking superficially like a proof press for short runs, to the big rotary curved plate machines used in the Bureau of Engraving and Printing, Washington, for postage stamps. The paper is slightly dampened for printing, as it must be forced down into the depressions of the plate. It is, therefore,

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often possible to distinguish between engraving and raised letterpress printing (thermography) by examining the back side of the sheet or card. It should not, however, be confused with embossing done with dies. The latter usually has a much more pronounced lift on one side and depression on the other, although such embossing is sometimes done in connection with engraving by using a countersunk die.

In the days before the halftone, many very fine steel and copperplate engraved portraits and other pictures were used in the better grade of books, but other processes have pretty well superceded them.

Rotogravure

This process, which travels or has travelled under a number of different names — rotary photogravure, gravure, etc., is nearer related to engraving than letterpress printing. All processes using recessed instead of raised printing surfaces go under the general name of intaglio. This is one of them.

Printing is done from a copper cylinder on which the design is etched, and by means of photography all sorts of work may be reproduced. In fact, camera equipment for this process is as important as the press itself. The public is most familiar with it in colored sections (not the comic) of Sunday newspapers and in various picture and movie magazines.

Halftones for letterpress printing get their shaded effects from larger or smaller dots. Gravure uses the same size depressions or dots all over, but they are of varying depth, thus capable of holding varying quantities of ink when on the press. A doctor blade wipes off the surface of the plate before printing, since printing comes only from the depressions, same as on copperplate engraving.

Collotype

Collotype is a photo-gelatin process closely related to lithography, in that it uses the principle that grease and water repel each other. However, the gelatin surface of the plate is treated to a glycerine solution, which, like water, is repellent to ink, rather than water itself. No screen, dots, or other devices are used for shading, the surface of the gelatin itself providing gradations. The result is the nearest to a photographic reproduction obtainable by any printing process.

Collotype plates do not have the durability of most other kinds, and they are, therefore, used on comparatively short runs for very high grade work. Collotype printing is a highly specialized branch of typography, with relatively few firms in the business.

Lithography, offset and collotype all come under the general heading of planography — processes which use plates which are practically flat, as contrasted to our own letterpress (relief plates) and intagio, (gravure, rotogravure, copperplate and steelplate engraving).

There are numerous modifications of the various processes, which need not be described here.

The Various Kinds of Plates and Cuts

The new printer or student is apt to have a very hazy idea of cuts, plates, slugs, etc. Slugs, as

explained elsewhere, are strips of metal six points or more thick — similar to leads, except that leads are one or two points thick. However, linotype or other machine composition materials are called slugs when made up in line form.

The word cut also seems to give trouble. A cut is any kind of block or plate which has on it a design which may be used to print from. It is an abbreviation of the old term woodcut, a survival from the days when there was very little else that a printer could use for illustrative purposes. Nowadays the word is used indiscriminately on halftones, line etchings, electrotypes therefrom, and anything else of that nature.

Some beginners erroneously use the word cut to describe an electrotype or stereotype of a form of type.

Stereotypes and Electrotypes

Stereotypes, like electros, are duplicates of a form made up of type, cuts or both. They are made by taking a cast of the form with a matrix or mat under heavy pressure, from which mat a casting is made. The metal is usually harder than linotype, but softer than foundry type. Newspapers, except for small ones, make stereotypes from which they run their editions. As many duplicates as desired can be produced, so that the paper can be run on several presses at once.

An electrotype is a duplicate of the face of a form of printers' type, or a cut, made in copper; and electrotyping is a low cost process of duplicating anything that has already been made ready for the printing press.

Composition from printers' type and all kinds of engravings required for printing books, circulars, etc., is expensive and can be used only singly, but by electrotyping, any number of duplicates can be made from the type matter thereby multiplying production to that extent. Advertisers employ expert artists and typesetters to furnish them with a model advertisement and when all is satisfactory they have hundreds of electro-duplicates made and send them out to as many different publications. This model is called the "original" and it is kept to make more electrotypes if wanted later.

Near the close of the eighteenth century, Galvani, an Italian, discovered the key by which Volta, his contemporary, unlocked the secret producing the "galvanic battery" which would deposit a copper face on a suitable base; this discovery was in the year 1799 but it was not until about the year 1839 that the first electrotype was made and this by a Liverpool, England, experimenter. In the same year electrotypes began to be made in America by Harper & Bros., publishers in New York City, and from that time inventions and improvements have been ushered in. The greatest discovery was the power of the Plating "dynamo" introduced about the year 1872, which displaced entirely the galvanic-battery. In the early years of electrotyping, forms were moulded in the day time and hung in the battery to stay there all night—it took this time for the galvanic-battery to deposit copper thick enough to handle; now, the dynamo will deposit copper thick enough to handle within one and one-half hours or less.

There are over twenty different operations necessary to make a first class electrotype, and much costly machinery to handle the work expeditiously. Thin copper plates are kept on hand over which a thick layer of bees-wax, or a similar substance known as "ozokerite" is poured and allowed to cool. With a power-moulding press, the form (cut or type) is pressed into the wax to get a full impression of the surface, and from this wax impression the electrotype starts on its way. The one essential ingredient, indispensable to electrotyping, is black-lead, also called "plumbago." This acts as a lubricant, preventing the type from sticking to the wax when removed from it. It is also necessary to facilitate the depositing of copper on the impression, as wax is not a conductor and plumbago is a good conductor.

The wax impression (we are now through with the form) is now placed into a machine which thoroughly coats the surface of the impression and to its depth, with a film of plumbago and next it is placed in the tank solution (blue vitriol dissolved in water to which is added a little sulphuric acid) and opposite the wax impression is a thick plate of pure copper called the "anode." In three hours time more or less, according to the thickness of copper required for the work, the dynamo will deposit from the anode to the wax impression, a copper shell thick enough to remove from the impression "case"; the removal is made by pouring hot water over the case, which melts the wax, and the copper shell is easily taken off; the wax case is now returned to the melting pot to be used again for other work. The electrotype has now been born in the "shell" and now comes a very important operation.

Molten lead will not stick to copper, but it will stick to tin-foil. Tin-foil will not stick to copper until a flux is used between them, so this is what must be done—the copper shell is placed face down, in a shallow iron pan and the whole floated on the surface of molten lead in a furnace pot. An acid flux has been painted over the back of the shell and thin tin-foil laid over this and the heat melts the tin-foil, when the whole is removed from the pot and molten lead poured on top, filling the "pan" (shell). The lead used is made especially for electrotyping purposes and contains a little tin and antimony. The tin makes the lead flow more easily and the antimony is added to harden the lead, as pure lead is too soft. The casting is now allowed to cool and then is cleaned by using benzine and pumice-stone. The heat of the molten lead in backing the shell warps the shell somewhat and the next operation is to straighten the shell partially and send it to the "finisher" who makes it ready to be further backed with lead or wood to make it type high. Some plates are not made type high, but the sides are beveled to be attached to the printers' "patent type high" and ready for the press.

Other Duplicate Plates

Plastic plates are being used to some extent by printers and by periodicals whose publishers wish to print them in several places at once, the lightness of the material making it possible to ship them by air. In such cases high plate cost is not a deterring factor. Rubber and other composition plates have

also had a certain amount of vogue in the last few years, but they are expensive. Zinc or line etchings are one of the most common forms of original cut. These and halftones, make up the big bulk of original cuts for ordinary printing. Line etchings can be made from pen-and-ink sketches, and most types of illustrations which do not have shading.

Both line etchings and halftones come under the head of photoengraving, a specialized business which is very seldom included in a printing plant unless it publishes a daily newspaper. Speed rather than quality or cost is usually the aim of newspaper work. The printer finds it more economical to buy his cuts.

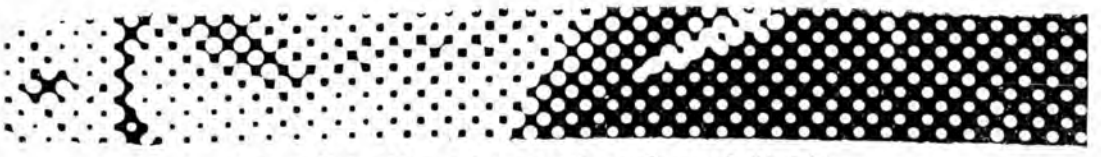
Line etchings are made by transferring the design to a plate photographically, then eating away (etching) those parts of the plate which are not required to print, leaving the design or cut on the zinc. It is then mounted type high, if it is to be printed from. Usually electrotypes are used, and the original etching saved so that it can be used for more copies later, without being subjected to wear on the press.

In planning on cuts it is important to remember that red, deep yellow and green photograph black. Black lettering on a red background, for instance, will make a solid blank — no visible lettering. On the other hand, light blue will not photograph at all. All original work should, if possible, be done in black on white, preferably india ink on drawing board.

Halftones

Photographs, wash drawings, pencil shadings, and other work which have grey tones and deviations from plain blacks and whites cannot be reproduced by a straight zinc etching. These middle tones must be broken up into dots, larger or smaller, but even the largest of them minute. The halftone process accomplishes this. Examine any halftone picture with a magnifying glass, and you will see that the dark areas are made by dots which are so big that they run together. The lighter the area, the smaller the dots, which leaves more white space between them. The eye surveys the picture without a magnifying glass, and gets the over-all picture of light, shade and solid without the dots being particularly noticed.

In addition to normal halftones, we show an enlargement of a portion of one. The very smallest dots are referred to as highlight dots; the areas which appear solid, with little holes in them, are called shadow dots. The part with the shadow dots prints darkest, of course, while the area of highlight dots prints lightest. The variation between these two extremes gives the various gradations from light to dark.



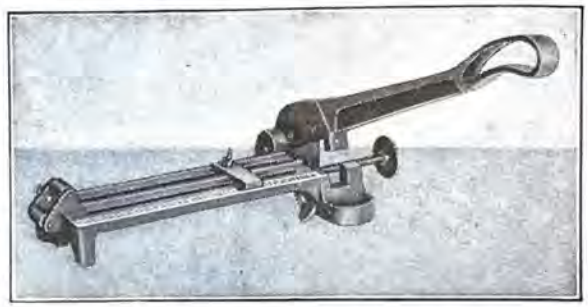
A small section of a greatly enlarged Halftone

This breaking up of the photograph or wash drawing into dots is accomplished by putting a lined glass screen between the camera and the picture. If the halftone is to be used on newspaper, a coarse screen with comparatively big dots is used, because a cut with fine dots would make a muddy reproduction on the rough, absorbent surface. On a good enamelled paper a halftone with fine dots is preferred, because the smaller the dots, the better the reproduction will be. A 65 or an 85 screen cut (65 to 85 lines each way to the square inch, respectively) may be used for poor paper, with a 120 or 133 screen for work on better paper. These are common screens, but many others are used, including even finer than 133.

Having been broken up into dots, the cut can be etched, in a manner similar to an ordinary line etching. Zinc plates are commonly used for the coarse screens, and copper for the fine ones.

Coarse Screen Halftone
(Background has been cut out)

The original drawing or photograph for line etchings and halftones should be at least as large or larger than the desired cut size, but not more than six times bigger, for economical costs. The original should be in direct proportional shape to the intended cut, because the engraver cannot change the length in relation to the breadth without very fancy and expensive manipulation which not all are equipped to perform. In other words, if a drawing, 4x6 inches, is to be made into a cut, say 3 inches long, the width would have to be 2 inches, or if it is to be 3 inches wide, the length would of necessity be reduced by one-quarter, also, or 1½ inches, making it 4½ inches long.



Fine Screen Halftone

Do not forget that 10 square inches and 10 inches square are two different dimensions. A cut 10 inches square is 100 square inches in area, or ten times as large as a cut containing 10 square inches.

Remember also that when a drawing is to be reduced in size, reducing the AREA by one-quarter, for instance, is quite different from reducing the length and width by one-quarter. A drawing 4x6, if reduced by one-quarter in length and width, will be 3x4½, or 13½ square inches, whereas if

it is reduced in AREA by one-quarter, the result is 18 square inches, and dimensions of approximately 3½x5⅛.

Instructions to an engraver should be very explicit on these points, to prevent mistakes or delay.

Combinations of line etching and halftone can be made, but usually cost two or three times as much as an ordinary line etching (line cut). This can usually be avoided if the customer knows this and has his art work prepared accordingly. Benday shading, mentioned on page 8 is often a good alternative. Grey or other pattern shading can be indicated by the artist, who uses a piece of tissue over the top of the picture to indicate what areas shall be shaded. The engraver carries on from this. The shading cannot be put on the drawing itself, it must be on separate tissue, or simply indicated on the tissue.

Cleaning Half-Tone Cuts

Did you ever put a penny in vinegar to make it as bright as new? The same principle may be applied to cleaning half-tone cuts with good results, because they have a copper surface. Instead of using common vinegar, however, it is best to purchase a little acetic acid (vinegar's near relative) obtainable at drug stores and most paint stores. First put salt on the cut, and pour a little acid on. Rub the cut vigorously with a good stiff brush, getting the bristles down into all the crevices between the dots of the screen. Wash out the acid and salt with warm water, being sure to do an absolutely thorough job, so that the chemical action will go no further. You will then have a cut that will print as good or better than new—in fact, some printers do this to new ones because they claim the finer parts of the cut come out to much better advantage if so treated.

Color Plates

For colored illustrations in line etching technique, a separate cut is made for each color, with the raised or printing portions on each corresponding to the portion which is to be printed in that particular color.

The making of color plates from colored photographs, paintings, etc., is a much more complicated process, because not only must each color be separated so as to provide plates for the separate colors, but normally they are reproduced by the four color process — that is, only four different plates and printings must take care of all the colors and tints. There will be a plate each for red, yellow, blue and black. Combinations of dots in these four colors must create in the eye images in brown, purple, green, etc., as well as the normal blues, yellows and reds with all their variations.

Such plates are made photographically, color screens separating the parts required for each plate. Hairline register and better is required, and unless each plate is identical in size with the rest it will not be possible to get satisfactory results. Shrinking or swelling of the paper between printings of colors is enough by itself to throw the whole job out of gear. Of late years air conditioning has helped to keep four color process printing from being the headache it used to be.

Much color work is, of course, done with line etchings, one for each color. One or more plates of a set may be a solid color or tint block. Careful register is required, but that is not so serious

a problem as it is with four color process work. Aside from ordinary tint blocks or solid colors, there are various pattern, dot and screen effects which may be used by the engraver when making the plates. The crudest form of these may be seen in the colored comic sections of Sunday newspapers. Such effects are made with what are called benday screens, after the man who originated them. The term is so common that the name is no longer capitalized or divided.

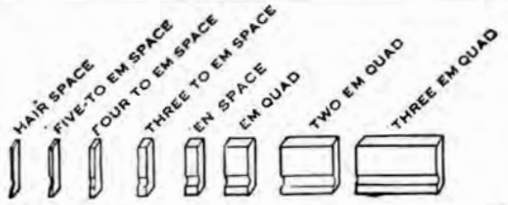
Tint Blocks; Linoleum Blocks, Etc.

Many different kinds of type high blocks can and are used for tint blocks or background colors. Included are wood, rubber, composition, plastic, metal and linoleum. Printers can and often do make their own simple shapes from the softer of these materials, such as plastic, rubber or linoleum. A person who is at all handy with a pen or brush can make very effective decorations or simple illustrations. Linoleum block cutting is taught in many art classes.

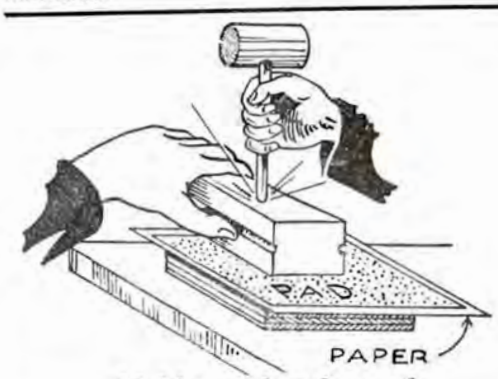
The Printer's DICTIONARY

"H"

(continued)



Hair Spaces — Spaces for type, which are thinner than 5 em are said to be hair spaces. A five em space should not be thought to be five ems long, however, nor a three-em space three ems long. One of the idiosyncrasies of the business is this designation for spacing materials. A five-em space is really a five-to-the-em space; that is, it takes up one-fifth of an em, not five ems, in width. The diagram given herewith illustrates the whole scheme.



Making a hand proof

Hand Proof—Proof made with proof press or by laying a piece of damp paper on an inked form, placing a heavy cloth or felt over that, followed by a planer, and tapping with a mallet. Care must be taken that the paper, felt or planer does not shift while taking the proof.

Hanging Indention—The use of a long first line, with subsequent lines of the paragraph set in an em or more from the left margin. In other words, just the opposite of the ordinary method of indenting paragraphs.

Hard Packing—Very little packing on the tympan, and that made with hard surfaced card, paper, or pressboard. A hard packing makes a much more clearcut impression from type, and should be used wherever possible, especially with new, unworn characters.

Heading—An electrotype or type used for the title of a paper, or the head of any sheet.

(To be continued)

LESSON ELEVEN

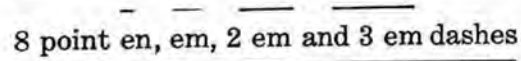
Hyphens and Dashes

A standard font of type contains hyphens but no dashes. Dashes are considered auxiliaries and are sold separately or along with other auxiliaries, such as brackets, asterisks, etc.

The hyphen is just a trifle shorter than the en size dash, and is, of course, a much more commonly used character. It serves not only in compound words and for dividing them, but also in programs, index work and such, where it is used to guide the eye from one side of a line to the other.

The shortest (en, or half the length of the point size; 4 points long on eight point, for instance) is used for connecting two dates or figures.

The em (for example, eight points long on an eight point body) is the most commonly used for straight work. Aside from its frequent appearance by itself in



8 point en, em, 2 em and 3 em dashes

ordinary sentences, it may be combined with a colon, thus :—. Side heads are often followed by this dash, and it will be found in lists of names and directories where an indention is required with more emphasis than a mere blank space.

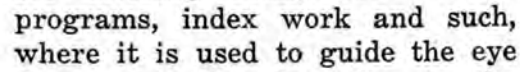
The longer (two and three em) dashes are used alone or in combination for display work of various kinds.

If you have en dashes as well as hyphens in your equipment, it is well to see that they do not become mixed. Small side cases for such auxiliaries as dashes, asterisks and the like are extremely convenient, and prevent your supply from being divided or scattered in compartments of other cases.

Reference Marks

Reference marks are used for a wide variety of work. Classic examples of their greatest flowering are, of course, railroad timetables, which often have so many that they are obliged to go far afield to find a wide enough variety.

For most printers the asterisk, dagger, double dagger and the others shown here are sufficient.



* † ‡ § ¶ ‖
8 point reference marks

Some printers prefer and use small figures cast high or low on the body (superior and inferior figures) for references or footnotes. They all serve the same purpose. The notes themselves usually go at the bottom of the page and are set in a size smaller than the text. If the line to which the note refers is set in display type, as it may be in advertising or such matter, the note itself may be as much as four or five sizes smaller. You will run across examples in which the footnote is in six or eight point, whereas the word or words to which it refers may be of almost poster size.

The asterisk seems to be the number one reference mark, with the dagger and double dagger following along after. Almost any kind of a miscellaneous character can be and is used for the purpose if the notes are too numerous to be covered by ordinary ones.

Type founders sell auxiliaries separately from type fonts. Years ago they were included, but this meant that printers were paying for them whether they needed

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any more or not, so the practice was given up. They are not made to match individual type styles, but are more or less standardized in such form that they can be acceptably used with almost any ordinary roman or oldstyle face. A few are also made in a bold face to go with heavier type.

How To Set Initial Letters

Put the initial letter in place, then set the balance of the first word in caps. If the initial is the article A or the pronoun I, set the next word in caps. If the first word is part of a proper name—individual organization, or otherwise, the complete name is set in caps. Line up the top of the initial with the caps, using short leads or whatever may be

FOURSCORE and seven years ago our fathers

necessary. The lines which follow the first one, and which are beside the initial may be indented by placing an en space before the first letter of each line, except in the case of letters like A, L, T and Y, which have plenty of white space beside them on account of their shape. If quotation marks come ahead of the initial, use the same size as the initial itself, and put the quotes out in the margin.

Some printers use an em instead of an en space at the beginning of the succeeding lines, some as little as a three em space, depending on the size of the initial, the bigger initials having the larger space. Almost all of them vary the space after letters like A, F, Y, etc., usually leaving none at all, and some particular ones, if the initial is not encased in a frame, notch out a letter like A so that the following letter can be set closer than the ordinary body would give the opportunity. A few make no indention whatsoever for the second and following lines.

Like all typography, the appearance of the individual job is the ruling factor and must be given first consideration.

You'll find some printers in their haste pay scant attention to details, but their work shows it, and should not influence the man who wants to learn to be a first rate craftsman.

Setting Quotation Marks

In most fonts of type, a pair of inverted commas are used at the beginning of a quotation, and a pair of apostrophes for the end. In a few styles quotation marks ("quotes") are made for the beginning. If a quotation is used inside a quotation, it is enclosed by a single inverted comma and an apostrophe. These customs are not inviolable, however, and some magazines use single characters for the original quotation, double, for the inside. If single and double quotes come together, separate them by a thin space. If a quotation extends through more than one paragraph, do not place end quotation marks on any but the last one. Each paragraph should have them at the beginning, however.

In general, all other punctuation, such as commas, periods, question marks, etc., should be put ahead of quotes. Certain involved combinations may require different treatment, but they need not be covered at this time, as they are relatively uncommon.

Quoted Matter or Extracts

If a quotation or extract is quite long, its readability will be improved if it is set without quotes, in a smaller size of type, with extra leads at top and bottom to set it off from the balance of the text. It may be set the full width or indented, and sometimes when indented it is put in the same size type as the rest of the matter.

The Proper Way To Set Tabulations, Ruled and Columnar Work, etc.

Shown below (Fig. G) is a specimen of tabulated work. The dots or points used are called dotted leaders, or if hyphen shaped, hyphen leaders. As you can see, the length of the leader

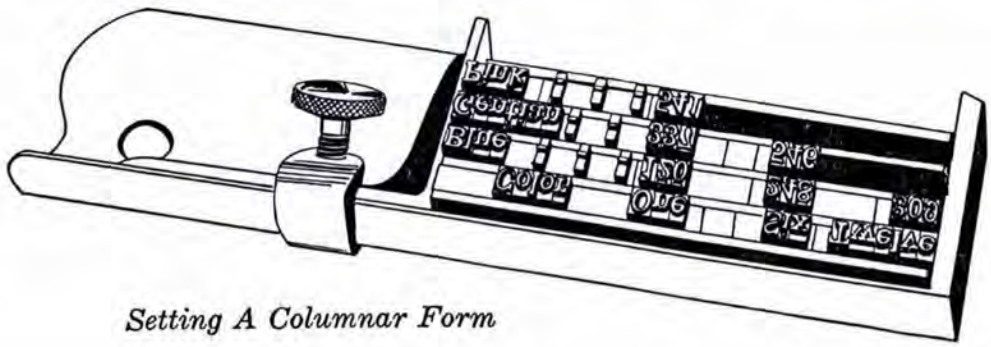
writing desk..... 79.50
sleigh bed..... 129.00
mahogany mirror..... 49.95
mahogany settee..... 350.00
bedside table..... 19.75

Figure G

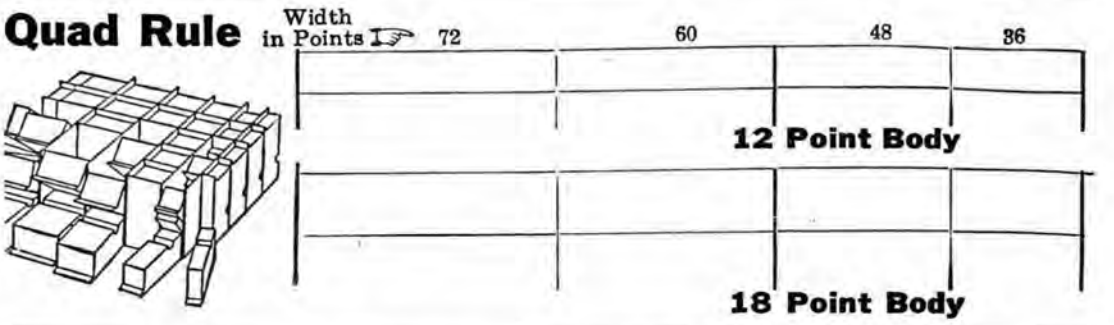
line will depend upon the longest row of figures in the tabulation, so this should be checked before you start setting. Figures in most fonts of type are all cast on an en body, so that they are all one width. This simplifies making up straight columns. Be sure that each row of figures is lined up properly. Make your column widths in picas, half picas or multiples of them so that it will be easier to fill them out, and also to prevent the necessity for having odd lengths of lead and rule around your shop when the job is finished and the form broken up. This will make lock-up easier, too. Rule should be cut a little scant so that the type matter will squeeze together without interference from the rule. Use slugs (6 pt. or larger) as far as possible in place of leads so that your form will be stiff. Avoid small spaces for the same reason. If you have several columns of figures you can assure their being

	1957	1956	1955	1954
January	336	371	368	422
February	328			
March	324	386		
April	416	329	356	
May	253	438	286	570

in line by using a piece of slug or rule which will set up against each row. For example, to make this plainer, we show here a complete line, under which we show the next line with the first column filled in, followed by a piece of rule which exactly fits the column. The next line is the same as the second, except that the compositor



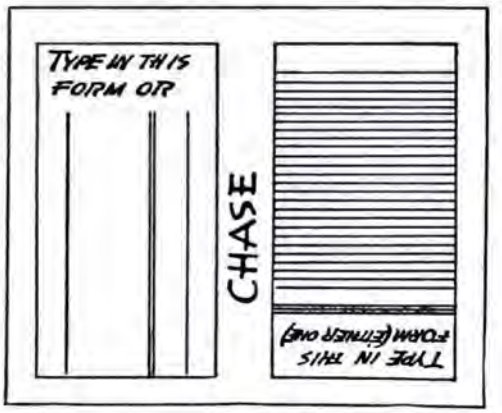
Setting A Columnar Form



has set the next column, and used another shorter piece of rule to fill in and get the line justified (tightened) correctly. The fourth and fifth are mere repetitions at each stage of the setting up, and the last line is the completed job, same as the first. If you use this way of making columns, you can be sure that your columns will have military precision and not be full of figures out of line.

Setting Ruled Forms

Ruled forms without perpendicular lines present no particular problem, as they can easily be made with ordinary rules and spaced with reglet, leads, slugs,



or combinations of the three. The addition of vertical lines complicates the work in direct proportion to their number.

The insertion of words between rule in such a form takes more time, and careful justification. To avoid cutting rule into small pieces and fitting it, many printers make two forms; the first with all the horizontal rules and any type lines; the second with the vertical rule. They lock these side by side in the chase, the head of one at one end, the head of the other at the other end, so that by running the work through the press twice and turning it around for the second impression, they will have two completed forms which may be cut apart. The presswork this way takes no longer than if the form were made up in a single piece, but it may require a larger machine, the form being twice as big.

If for some reason the above method isn't practicable, quad rule or tabular quads can be of much help. These are pieces of type of various widths with a hairline cast on the lower edge, so that a row of them set together will make a solid line. They come in the common point sizes from twelve points up, which eliminates the necessity for cutting leads, slugs and reglet to go with ordinary one or two point rule. Being accurately cast to standard widths they make a good square form, with less chance for drop-outs. Quad or tabular rule can be used on all horizontal lines except where wording is to appear between lines, and you can use it

there, too, if there is so much text matter that a double form (described for use with horizontal and perpendicular rules) appears to be quicker. Ordinary strip rule is used with it for vertical lines.

Ruled form setting requires care and accuracy if the type, rule, etc. is to lock properly, and dropouts or pullouts are to be avoided. You'll find it best to set the entire width in the stick at one time if you want to check your justification. A piece of rule the width you are going to use in the vertical lines (one point, probably) can be placed in the form even though short to avoid having a long one in the composing stick.

Be sure that you get exactly equal spacing between each perpendicular rule, and that all the rule supposedly the same length is in fact just that, because the squareness of the job, the straightness of all the rules, and the ability to lock it tight will depend on this.

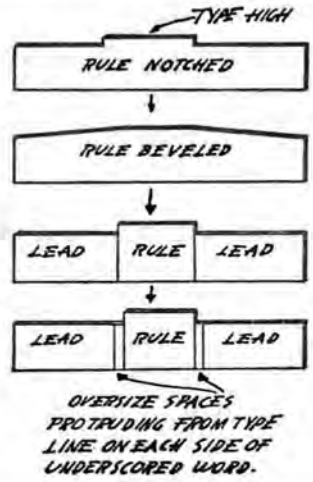
(More in later lesson)

How to Underscore Words In a Line of Type

If one or more words in a line, but not the whole line, require emphasis, they may be set in italic letters, or the words may be capitalized, or, lastly they may be underscored. Of the three methods, the underscoring often is the one to give most emphasis, but it is also usually more of a job to handle.

Underscoring may be done by notching brass rule so that while the face of the rule only shows under the words to be emphasized the actual length of the rule is the full length of the line under which it is placed. If preferred, the rule may be cut the exact length of the underscoring, and the rest of the line can be filled in with a two point lead on each side of the rule. From this it will be rightly inferred that it is necessary to have your copy set with leads between the lines—probably two point leads, although you can, if there is some objection to that much spacing, use a one point brass rule and one point lead for filling in.

Be sure that your rule is directly under the proper word or words,



and place it carefully so that it will not creep to one side or the other. Some printers make doubly sure that it stays in place by placing on each side of the word or phrase to be underscored a space two points bigger than the line of type itself. They then fit the cut rule between these spaces, and put two point leads on each side to fill out the line. This prevents the rule from slipping or creeping, and at the same time the line spaces out nicely.

In underscoring, care should be taken to get the rule directly under the word or words to be empha-

sized, and also to get the length of the rule right, so that it will be neither too long nor too short. Some printers are inclined not only to cut the rule to fit, but also to cut it so that it fits on each side, but not under, letters with long descenders like "y", "j", etc. Others also cut the rule shorter when the first letter or last letter is a "T", "Y", or some letter whose base is small. The majority stick to the exact length, however. It is best to be governed by appearance, especially on particularly nice work. Points of this kind will come up as you pursue the vocation of printing, and you will gradually develop your own way of handling them—ways which you find best, taking all circumstances into consideration.

Lesson Eleven—Questions

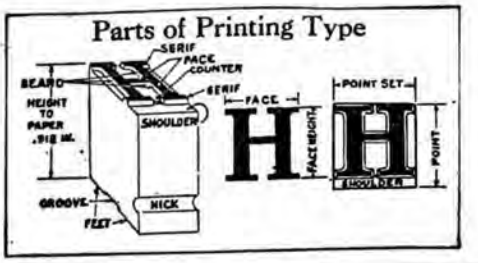
1. *How can you distinguish a hyphen from an en dash?*
2. *Describe how you would set type around an initial letter.*
3. *How do you set a quotation within a quotation, and in what way is it spaced?*
4. *In what width should columns be set for easiest composition?*
5. *Describe one way of doing a ruled job which eliminates short cut material.*
6. *How does quad rule work, and why is it a labor saver?*

The Printer's DICTIONARY

"H"

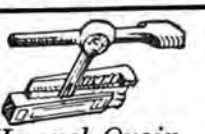
(continued)

Headline—Any display line at or near the top of a printed sheet, usually set in type considerably larger than the rest of the job, often in caps.



Height to Paper—The height of type from foot to face. A letter which is not high enough to print is "low to paper," one which is too high, "high to paper."

Hellbox — A receptacle for all broken, bent or otherwise unusable type or metal material.



Hempel Quoin

Hempel Quoins—Devices for locking or tightening the form, consisting of two wedge shaped pieces with teeth in them, which are placed together. The key, which does the tightening, also has teeth, and these teeth engage those in the wedges, pushing the pointed ends away from each other, and in so doing bringing the thicker ends of the wedges together, which, being thicker, take more space and tighten up the form. Turning the key the other way brings back the wedges to a point where they take less space and loosen the form. Chases in which there are screws for tightening or locking do not need quoins although they may be used in them without alteration if desired.

Highlight—Light parts of halftone or other cut as contrasted with intermediate (middle) tones and solids.

Hollow Quads—Quotation quads, 2 picas x 4 picas in size.

Hue—The predominating color in the ink.

"I"

Imposition — What seasoned printers would call "stone work," that is, the making up of the form on the imposing stone, or elsewhere, in such shape that it is ready for the press, including the locking up of the form in the chase. See also *Composition* and *Makeup.*

Imposing Stone — A metal or stone surface, absolutely true and level, on which the form may be put into the chase and locked up. Excelsior press owners who do not have separate imposing stones or surfaces are able to use the chase bed for that purpose.

Impression—The squeeze between the surface of the form and the paper.

Imprint—The name of a firm or individual and sometimes address, on a piece of work which identifies it as his production, or as put out under his sponsorship. In the case of books, there are sometimes two imprints, one of the publisher, and another of the printer, when the publisher does not have a printing plant and hires somebody else to do it for him. Many manufacturers furnish circulars of their products to merchants who handle them; or to representatives, if they sell insurance or a commodity not requiring a retail store or wholesale warehouse. In that case the manufacturer often puts the imprint of his representative or dealer on the circular, and such circulars are known as imprint circulars. Under such circumstances, the imprinting is usually done at a different time than the balance of the printing, because the quantities are smaller, and it may best be done on smaller presses. Many small press owners find it profitable to imprint circulars for the manufacturer; or for the dealer, in case the manufacturer supplies them without the imprint. Many printers have made up for them a special design, which may be reproduced in small size, and used on such of their work as is permissable and in good taste. When that it done, the imprint is in reality a trademark. Many of the early printers had their imprint, just as silversmiths and other craftsmen had their mark which identified their wares. The mark given, below, if we were in the printing business, instead of being manufacturers of presses and supplies, would be an imprint, and under a broad construction of the term may be applied even tho we are not printers, when we use it on our own printed matter.

Indention or Indentation — The space at the beginning of the first line of a paragraph, or any similar space similarly placed.

Index—Often called a fist (☞) or a hand. The other meaning, fairly clear to almost everybody, is the alphabetically arranged list of the contents of a book, pamphlet or periodical, usually placed in the back or front for easy reference.

India Tint—A buff tint most commonly used when some shade off plain white is desired, particularly for book, pamphlet and circular work.

Inferior Letters or Figures — Characters set below the common line of the rest of the type. For example: $_{1234}$. The opposite of inferior characters are superior letters and figures: letters set above the common line, thus: ^{1234}

Specimen shows a few of the initials available

Initials—Usually the large letters which are placed at the beginning of a chapter, section, article, etc.

Ink Knife

Ink Knife—A thin flexible knife used for mixing printing inks. Long, slender ink knives are often called spatulas, in fact the terms are usually considered interchangeable.

Ink Slab—Of stone, plate glass or something similar for supplying ink to the proof press roller, or for mixing or working up ink to go on the job press.

Insert—A sheet or sheets not printed with the balance of the magazine, catalog or book, but bound in with it. An insert can usually be distinguished from the other regular material by the difference in paper, type, colors or other characteristics. Usually it is not set up or printed in the same plant. Some wholesalers make up the bulk of their catalog from such inserts furnished by individual manufacturers, and inserts are frequently used for advertising in trade publications, the manufacturer furnishing his own insert, and supplying the same one to several different periodicals.

Insertion—Something either left out or added, to be put in. In advertising, one insertion indicates the use of an advertisement once; two insertions, twice; etc.

Intaglio — Printing from plates having the letters cut in, instead of raised. Steelplate and copperplate engraving is done from intaglio plates.

Intermediate Tones — Middle tones of a halftone or other cut as contrasted with highlights (lightest part) and the solids.

Italic — Sloping letters, having the same general characteristics as Roman letters in most cases. Much of the conventional italic has a few letters, such as lower case a and g, which are unlike their Roman counterparts. (a, *a*, g, *g*.) Italics were first produced in Italy in 1501. At first only lower case letters were made, Roman caps being used with them, but italic caps soon followed. Italic is supposed to be modelled after the handwriting of the poet Petrarch. It is used largely for emphasis, titles, display, or in some cases nowadays, as a text letter (for body work), which latter use was its original one, altho in later years it was subordinated to Roman for that purpose.

"J"

Job Font—A font of type which is not sold by weight. Any font smaller than a weight font (12½ pounds or more, in most sizes) is a job font. Some job fonts in very large sizes weigh several times that, but when not sold by weight they are nevertheless called job fonts.

(To be continued)

LESSON TWELVE

How To Make Up Pages

Having determined the length your pages are to be, put a six point lead slug at the head. If this is the first page, and there is a title, space should be left at the top, so that this particular page, while it will line with the others at the bottom, will be shorter. A good rule to follow is to allow from two picas on a page three inches long to four picas if it is five inches or more. The exact amount must be governed by the appearance. Space the head out, and add the solid matter to the nearest line that will fit the measure decided upon. If the column is then too long, and the type is leaded, you can either remove leads, beginning at the bottom, or reduce their size — two point to one point, for instance. However, allowance must be made for contraction of the page when you lock it up. This will amount to about a two point lead in three inches, four points on three to six inches, and so on, in proportion. If you don't make that allowance, your page is likely to be short when it is in the chase.

For appearance's sake there are several taboos. The first line of a paragraph should not be at the bottom of the column or page, nor should the last line of a paragraph be used at the top. To do either of these things would make an undesirable notch or unsquared page — widow lines they are called in printing parlance. The last line of the page should not end in a divided word. These rules will all be found violated at one time or another, but due as much to carelessness as to inflexibility of the matter itself.

Layouts, Makeup and Imposition

A couple of definitions will probably be helpful here. We'll take them from our own dictionary, which says makeup is getting the form ready, as far as practicable, before laying it out to put in the chase; spacing it out, grouping it, etc. Makeup comes after composition (setting the type) and before imposition. Imposition is what seasoned printers call stone work, that is, the making up of the form on the imposing stone or elsewhere, in such shape that it is ready for the press.

Layouts — First Steps

First, then we have makeup. Of course, we have already done some makeup in previous lessons. Some specific kinds are included further along in this lesson. Just a word about layouts is in order, because a good layout will save makeup time. We will cover the subject more fully later.

You have a job to do. Your customer wants a card, stationery, tickets, billheads, piece of advertising matter — anything, in fact. There are a certain number of words to get in, and you have a certain amount of space within which to put them. Or if your customer knows what he wants to say, but is completely ignorant as to the amount of space it will take, a layout is in order.

If the job is a card, stationery, a ticket, or other work in which the size paper or card stock is known, layout resolves itself into taking a piece of the proposed

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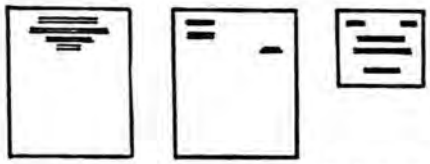
stock, or something else the same size, and lettering out, in pencil or ink, the words to be set, in roughly the size letters required. This enables you to find out about how much space will be needed, and also how any given arrangement will look. Try several.



Layouts help visualize finished job

A good layout may save you from a change of mind later in type size or style — which means time consuming extra work and expense. Skill in layout work comes with much practice. Big printers usually have a man who does nothing else. Advertising agencies and the advertising departments of some good sized firms have them, too, in which case the printer is given instuctions to follow, even down to the sizes and style of type to use. Smaller printers have to do their own for customers. But more anon on this.

The type, then, is set. The job, now, is to make up the form in accordance with the layout. If no layout has been made, a proof should be taken of the job as it is. The lines may be cut out, and the resulting strips or pieces of paper can be juggled around on a blank sheet the size of the proposed finished job, so as to get the best possible arrangement. You then have a sort of dummy-layout, which can be used in the making up. The spaces on the layout or dummy can be measured, and the type lines put in their proper position. As a matter of fact, in job work, as contrasted to book, magazine or newspaper printing, makeup covers a greater portion than imposition. Imposition calls for arrangement of complete pages in such order that when a group of them are locked up and run on the press, they can be folded and will come out in the proper order. Insofar as general printing includes catalogs, pamphlets, etc., which require that sort of handling, imposition fits the picture there, too.

But to get back to our makeup. We have pasted or pinned the lines on the sheet of paper or cardboard to our liking, and are now ready to make up the form in the same way. With this before us, we can rearrange our lines and space them out with the least lost motion. When the form is fully made up, we will probably find it worth while to take one more proof — in the galley, possibly — to see whether there are any rearrangements or spacing we need to make.

If the proof is satisfactory, the form is now ready for the chase, and can be laid on the stone or imposing surface. From here on we have imposition, with the proper arrangement of pages if there are more than one, or if not, the immediate locking of the form in the chase, as described in a previous lesson.

Pamphlet and Book Makeup

With all the matter set, you are in a position to make up pages. You may have already decided on the page size, and intend to let the number of them come as it will. Or you may reverse the process, and calculate the length you will have to use in order to keep your work within a given number of pages.

If the book or pamphlet has chapters, the first page of each chapter should have its head below the top margin of the other pages. Usually about one-sixth of the top of each chapter page is left blank, but the exact proportion is optional.

Here are a few other common practices:

Tables of contents, lists of illustrations, prefaces, introductions, if any, are treated for page size makeup same as the general text, that is, the first page of each has an amount of white space at the top the same as the first pages of chapters. They are also placed or begun on right hand pages. The copyright notice and imprint of printer, if any, take a lefthand page. Headings on pages (the running heads) may be set in caps of the same style and size as the text or one size larger if so desired.

An effort is made to have all chapters begin on a right hand page, even if a blank is left opposite.

Step Head is Quite Common
For Newspaper Headline Style
In Both Large and Small Cities

Of Late Years Many Newspapers
Have Adopted the Flush Head
Left Margin Flush—Right As It Comes

Still Another Style of Headline
In Which All Lines Are Centered
Has Its Adherents

Page numbers are on the left on left hand pages, right on the right hand, same point size as the text except on the short (first page of chapter) ones, when they are centered at the bottom outside the page measure in a size smaller. All page numbers, may, however, be centered at the bottom. Pages ahead of text usually bear lower case Roman numerals — after the text, cap Roman numerals.

Indentions and Headings

While the most common indention in body work is made by using an em quad at the beginning of each paragraph, you are by no means limited to this, exam-

This is to show the use of the *common indention*, made by using an em quad at the beginning

The *squared indention* is no indention at all, the first line of the paragraph being the same

For *hanging indention* all but the first line is indented, which gives a little display to the be-

ination of current printing will disclose a variation in practice. Wide columns are more apt to be treated with bigger indention; for instance, 18 picas or more with one and a half ems, 24 picas or more two ems. There was a time when such rules were more generally adhered to; at present the typographer is given a great deal of latitude.

Among the more common varieties, aside from the regular just described are the squared and hanging indentions. The squared uses no indention at all, the first line of the paragraph being the same length as all the rest. For hanging indention all but the first line is indented, which give a little display to the beginning of the paragraph.

Some newspapers use the hanging indention for headlines. Others use the more common (for them) step head, roughly similar to the stepladder form of envelope addressing, and called diagonal indention among printers. Of late years many of them have adopted

the flush head — the left hand margin flush, with the right hand ragged.

Finally headings, and sometimes even the finishing lines of text may be set with each one centered.

The measure of your skill as a typographer will come in part from the way you handle such things as headings and indentions. Practice and observation will yield steady improvement.

Setting of Figures

As a general rule, numbers in text or body matter are spelled out up to twenty — that is if they are one word. Above that, figures are used. However, it is perfectly good usage to spell out larger numbers. In newspapers and other rush work spelling out of bigger numbers is seldom done, but in finer, less hurried printing the customer or author of the copy may prefer it. In statistical work the use of figures will often make the text easier for the reader to absorb. If there is likely to be any question, the one who is paying for the job should be consulted.

In tabulations of figures the ciphers are all put in, but in body work you have the choice of several settings. You can make it $12,000,000 or $12 million. Or you can spell the whole thing out. Printers don't all agree, and the proofreader's columns of trade journals frequently give the subject an airing. Without doubt this and many other details of typography, spelling, grammar and related procedures which concern the printer are less rigid than they were in days past. Almost any statement must, therefore, be hedged by a "generally" or "commonly."

In body work a comma should — or usually is — placed in a five figured number such as 50,000, but in four figures, such as 5000, it is usually left out. In tabular work figures must come directly under each other, so the comma must be used in both cases or not at all. Occasionally tabulations will be seen with a blank space instead of a comma. In any event, the most important point is to have the figures line correctly, one over the other, and this cannot be accomplished if space is allowed in some figures and not the rest.

Since chapter headings are often given Roman numerals, and pages of introductions and prefaces use these numerals in lower case, we insert them here.

I II III IV V VI VII VIII IX X
i ii iii iv v vi vii viii ix x

Roman Numerals

All of us learned them in school, but our memory may need refreshing. How glad we all should be that we do not have to use them in mathematics. Our own numerals, by the way, are Arabic.

Use of Leaders

Programs, blanks, indexes, tables of contents, and tabular work often require the reader's eye to bridge what would be empty space if some provision were not supplied for making it easier to reach the figures at far right. Hyphen or dotted leaders are placed between, thus making bridges for the reader. They may be used in almost solid formation, or they can be widely spaced. When setting an index or similar matter the leaders usually go no further than required to meet the longest number; the rest of the leader lines

are made to correspond, which means a little blank space in front of the shorter numbers.

Plates $1.14
Cups ..... .45
Saucers ..... .39

Chapter I 1
Chapter II 45
Chapter III 69

Hyphen and dotted leaders set solid

Boston $5069.77
Hartford 3695.63
New York 8217.39

Blue Bird 7
Canary 91
Lark 153

Leaders (periods and hyphens) widely spaced

Whether to use the hyphen kind or the dotted variety is mostly a matter of preference. Both fill the same requirement.

If widely spaced the dots or hyphens are commonly lined up one over the other, which give them the appearance of vertical rows. Periods and common hyphens are often used for such setting.

Setting Long Lines With Short Leads

You will frequently find it necessary to set a number of long lines which require leading, but for which you have not long enough leads. Do not, however, make the mistake of using two leads of equal length to piece out each line. If you do, the form is likely to fold up or slide when handled. The safe way is to use a pair of unequal length, so that the joints will not all break in the same relative position. The illustration will make this clearer. Of course, if you have enough of the full length leads or wish to cut them, you can do so, but if these lengths are not needed very frequently, you'll find it better to piece out with your regular shorter sizes.

Making Up Forms With Rule or Border Around Them

Frequently a piece of display printing may be improved by placing it in a box or frame of rule or border. The main portion of the form should be made up in the usual way, all parts properly justified. The form should be spaced so that when enclosed in the rule or border it will have the right appearance, and to that end you'll find it best to have a galley proof of the form. You can rule around it in pencil to see how much margin must be allowed between the border and the rest of the form.

After you have decided that point you'll know how long the rule or border must be. If rule is to be used, it should be mitered or beveled to a 45 degree angle, so that the joints will fit neatly and snugly. Be sure that the parallel sides are made exactly the same length, so that the form will lock properly. If you are applying a border instead of rule, an equal number

Right Way

This is the right way to use pieced leads with all joints staggered. If you can spare a few full length leads it is well to use one, here and there, in place of a pieced one, in a long page. The first and last leads should be full length.

Wrong Way

This is the wrong way to use pieced leads. Notice that the joints are all in a straight line. Such a page is difficult to lift and very easily pied.

of pieces of like size on each side is essential for the same reason.

A galley is helpful for the next steps, although the job may be done on the imposing surface or stone if desired. If you are making up this form in a galley, with rule, take the top piece and one side piece, fit them together in the corner. Put enough leads against the rule to give you the space between the rest of the form you have decided is needed from your previous proof, then fit in the form, put your leads on the bottom and the outside, and complete by placing the other side rule and the bottom piece. Be sure that the leading and the balance of the spacing inside the box or frame is such that when the form is locked tight the joints of the rule will come together, without leaving the interior of the form loose. To this end it may be necessary to use half point strips, or even cardboard. The ability of the form to lift without piing, as well as its appearance when printed, will depend on the inside spacing.

When the job is completely made up, take another proof, and squint across the rule — or border if you are using that. Hold the proof up level with your eye and you can detect any deviation. You may prefer to put the form in your chase and lock it before you give it the final check, because the additional squeeze provided may effect the straightness of the lines.

Setting Poetry

The chief question which may arise in setting poetry is in the positioning of the lines in relation to the page and the column.

Lines of poetry are of unequal length, and if either the longest or shortest are used for centering, the page may not lock properly balanced. Even splitting the difference may not work, because the average line may be either long or short.

As in much other typography, the appearance is the thing. The left hand margin should, therefore, be set in from the column enough to make the work look well balanced. The final decision can only be made by taking a proof, and adjusting accordingly.

The author usually specifies in his copy how he wants the lines indented. However, if he doesn't, the usual way is to indent lines which rhyme the same distance. Lines which are too long for the column width should be run over and indented three or four ems from the common line. If the length of the over-run is too much for this, reduce the indent, but not below one em.

Lesson Twelve—Questions

1. *What are the practices which printers commonly avoid in making up pages?*
2. *What are:*
   a. *layout*
   b. *makeup*
   c. *imposition*
3. *How does a layout save time?*
4. *What effect has the width of a column on the width of the paragraph indention which a printer will normally use?*
5. *What may be used in place of hyphen or dotted leaders?*
6. *If long lines are to be spaced out with short leads, tell how you would do it.*
7. *Tell how you would make up a form with rule around it.*

The Printer's DICTIONARY

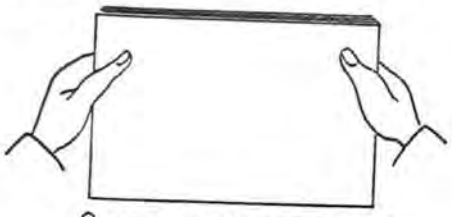
"J"

(Continued)

Job Press—A press suited for general job printing.

Job Printing — Miscellaneous printing, as contrasted with firms specializing on one particular kind, such as book or magazine work.

Job Ticket and Job Envelope—The work order that carries on it all information regarding the job, both instructions and record of work done.



STANDING PILE ON EDGE JUMPING UP AND DOWN SEVERAL TIMES

Jog—To jog up a pile of paper is to straighten it up so that all the edges are smooth and even.

Journeyman — One who has learned his trade in printing terms, it of course refers to the printing trade. The term is said to have come down from the middle ages, when skilled craftsmen were more itinerant, i.e., journeyed about.

Justify—To properly space out lines of type. Each space between words should be as much like the rest as it is possible to make it, with due regard for appearances, which will call for somewhat different spacing after periods, commas, and in cases where the end letter of the first word and the first letter of the second are of such a shape as to give the illusion of more space, when it is customary to use a somewhat smaller space so as to give a good appearance. Justifying which is not so particularly done ignores these distinctions, but is very easily spotted by the experienced printer. Of late years there has been a tendency to use closer justification, that is, leave less space between words than was formerly considered necessary. In place of the commonly used three em space, four em spaces are sometimes inserted, with thinner ones, of course, where needed.

"K"

Kalogram—Similar to a monogram, but including all the letters of a name. Used sometimes on individual stationery, bookplates, and such personal printing.

Keep Standing—The holding of any form of type, etc., so that, if necessary, it may be used over again, without resetting.

Kerned—A piece of type whose face overhangs the body is said to be kerned. Italic and script faces have more kerned letters than other styles. Some type, particularly machine composition material, have no kerned letters at all. Care should be taken to see that kerned type is not broken In some styles, f and i or l will not fit together, because of the kerning of the top of the f, hence ligatures (combination letters) are supplied, such as fi, fl, ffi, ffl. In some faces they will fit, but as a matter of custom ligatures are supplied.

Key Form—Jobs being printed in more than one color must be set into proper position on the page by the checking up with the form to be run in the color which best

shows that position. In most cases this is the black form. The one which determines this is called the key form.

Key Plate — Key form. Stamp collectors will recollect that many nations with colonial possessions, such as Great Britain, France, Portugal, etc., use a single design for the postage stamps of a number of colonies, the name of the colony and the denomination of the stamp being on a separate plate. In this case, the design, which is in color, is called the key-plate, because the margins are determined by the design, not the black plate with name on it.

Kick Press — A press run by foot power.

Kill—To kill type or matter is to order it taken out, and redistributed into the cases. It may or may not have been run in a previous edition—usually not.

"L"

Labor Saving Furniture, Rule, Leads, etc.—Material cut to various standard sizes and offered in sets, to save time in making up a job and making it easier to classify and lay away for future use.

Laid Paper—Paper having parallel lines and possibly cross lines, watermarked into it as a continuous pattern.

Lampblack—Used in the production of black ink. Carbon black, really a form of soot, but mostly produced by burning natural gas.

Layout — The arrangement of material, cuts, type, etc. for a job. Also used to denote the working diagram showing the way the job is to be set and printed.

l. c.—Lower Case letters—small letters, as contrasted with caps—capital letters.

Leaded Matter—Type with leads between the lines, as contrasted to solid (unleaded) matter.

Leaders—Dots or hyphens cast singly or together on one piece of type, used in a line to lead or guide the eye to figures, letters or words further along the same line. Leaders are cast on most sizes of body from 6 points up.

Lead Cutter—Small cutter made to cut leads to various lengths as desired. Cutters made strong enough to handle brass rule also, are called lead and rule cutters.

Lead Rack—A rack with compartments to hold different lengths of leads.

Leads—Strips of metal to use between lines of type. Cast in various thicknesses from one point thick up, the two point being the most commonly used. A lead six points thick or more is called a slug.

Legend—The title, caption or short description under an illustration.

Letterhead—Actually, the form which is printed at the top of a sheet of letter paper, but also used to cover the entire printed letter sheet.

Letterpress Printing — Printing done from regular type and plates, as contrasted with lithography, gravure, offset, copperplate engraving, and other forms of printing.

Letter Spaced — Work with spaces between the letters as well as the words. This is done most times to avoid leaving an excessive amount of space between the words themselves, especially in a short line, which is particularly difficult to justify properly.

(To be continued)

LESSON THIRTEEN

Standard Paper and Card Sizes

While paper is made in a variety of sizes, there are certain standard dimensions which are used as a basis of figuring, and most regular cut sizes are made to use them without waste. In bond paper this is 17 x 22 inches, which gives 8½ x 11 without offcut. The old name for this size, folio, with its companion 22 x 34, double folio, are the most commonly used in bonds.

Book papers use 25 x 38 as standard basis. Most cardboards except Index which is usually 25 x 30, are on the 22 x 28 basis. Some mills are promoting 22½ x 35 as a cardboard standard. There are other standards, such as 24x36 for flat newsprint, 20x26 for cover stock etc.

When planning work it is well to take into account the standard of the particular grade of stock which is to be used, as well as the press on which the job is to be run, and try to get the most out of the stock as well as the press.

The printer can often save money for his customer if he will suggest an economical size. He will also protect himself from possible undercutting by a competitor who may otherwise use substitution of standard for non-standard as a means of lowering his quotation.

Paper Weights and Sizes

The bases of figuring the weights, etc. on paper have been a topic for discussion for years, and still are. Take 17 x 22, the bond paper standard size. The ream in this, as well as in all papers used to be 480 sheets, but for many years the 500 sheet ream has been standard. 17 x 22-20 meant paper weighing 20 pounds to the 500 sheets. A few years ago some branches of the trade tried to popularize using the 1000 sheetweight, 17 x 22-40M for example — to indicate the weight. The scheme never received full acceptance, but instead added another system side by side with the old one.

We now have a third scheme to go along with the other two, and which may or may not eventually take their places. It has the very laudable objective of eliminating a situation whereby, for instance, a 20 pound bond weighs the same as a 28 pound cover, which is equivalent to a 51 pound book paper (because each category has a different size of sheet on which the weight of 500 or 1000 sheets is based).

This third way is to express the weight of any given sheet of paper or cardboard, no matter whether it be bond, book, cover, kraft, in the weight of 500 sheets each totalling 1000 square inches. Thus, bond paper which under the old system is labelled 17 x 22-16 (pounds to the 500 sheets) would be called 17 x 22-85 (the weight of 1000 sheets each having a surface area of 1000 inches). The sizes of the paper would not change, but where under the old system the printer would either have to figure out or have a table to tell him that his 16 pound bond would be the same weight as 25 x 38-40 pound book paper, under the new way his book paper would be called 25 x 38-85, and save him all the figuring. On some jobs choice of the kind of paper may be from any one of

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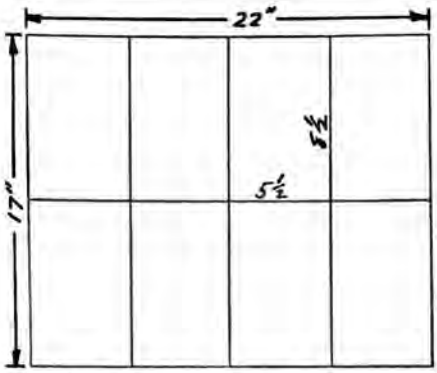
several categories, and having the same weight designation for all simplifies the work of selection.



HOW TO CUT SIZE 5½ X 8½ OUT OF A SHEET OF PAPER SIZE 17"X22"

Figuring Cut Sizes

For simplicity, first take the half letterhead size 5½ x 8½ from

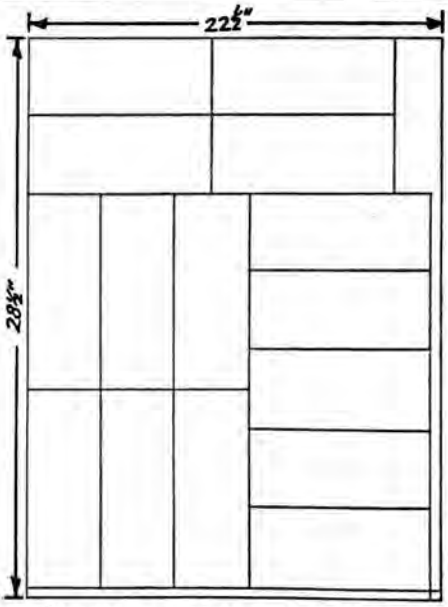
22 x 17
5½ x 8½

4 — 2 equals 8 to a full size sheet

Divide the quantity needed by 8 and you know the number of full size sheets necessary for cutting.

Many card stocks, while nominally 22 x 28, actually are 22½ x 28½. This extra half inch is sometimes most useful in getting the last bit out of the sheet without waste. Not all come that size, however, so check before figuring.

On card sizes, particularly, trimming as well as cutting is advisable, since trimming after cutting will eliminate possible fuzzy edges and improve the card's appearance. 1/16 to 1/32 of an inch is needed, depending on how sharp the knife may be. While an allowance can be made for this, in most cases the stock may be cut that much undersize without causing any trouble.



CUTTING 15 PIECES OF SIZE 4"X10" OUT OF A SHEET, SIZE 22½"X 28½"

HOW TO FIGURE

22½ X 28½
10 X 4
2 X 2/8 = 4

20½ X 22½
10 X 4
2 X 3/12 = 6

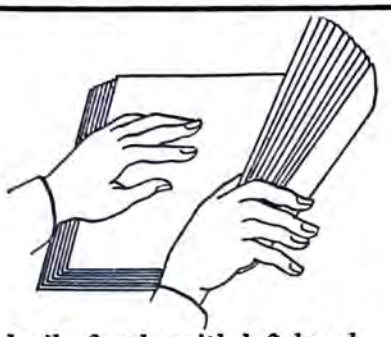
10½ X 20½
10 X 4
1 X 5 = 5/15 PCS.

Straightening the Printed Sheets

One way of converting the irregularly arranged sheets from the press into a smooth edged pile is to pick up a quantity of about half an inch deep, set them on edge, arch them so air will get between the leaves, and jounce them up and down. Smooth finish papers will jog up easier than rough finishes. Experience will teach you how much you can handle of a given kind of paper at a time. Pull out single refractory sheets, and put them front or back, otherwise they will be bent or crushed.

Counting Paper and Cards

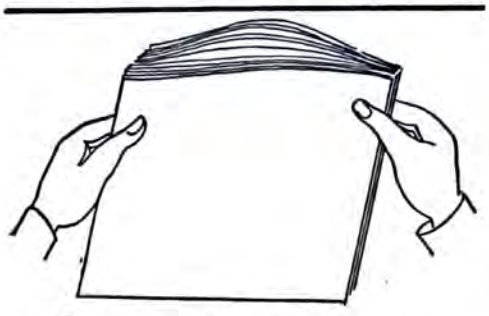
Rapid counting of paper sheets takes practice, but you can learn. Have the paper jogged up square. Roll back a few of the sheets from one corner, so that they separate enough to be easily counted. In time you'll be able to pick off five or more sheets at a time without counting them singly. Tuck the counted sheets between the fingers of your left hand so that the thumb and first finger will be free to pick up and count more; keep repeating the operation. Surprising speed will be acquired.



Hold pile firmly with left hand curling up other end with right hand

Cardboard may be counted with reasonable accuracy by laying out 100 pieces and measuring the rest by the height of the original pile.

For padding there is a pad counter which enables the printer to insert a blade between sheets in a pile, thus getting the same thickness each time.



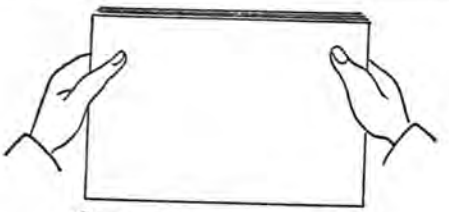
SEPARATE SHEETS TO GET AIR BETWEEN THEM BEFORE JOGGING

Jogging

Jogging consists of shaking or jiggling the sheets together until their edges are all lined up with each other and the sides are smooth. It can be accomplished by taking a few sheets at a time, jogging first one end against a bench or table, then another edge, loosening the sheets up in process so that the air gets between them and allows them to slip over each other. Practice will indicate how many sheets of various stocks can be handled at one jogging.

Cutting Paper

While different cutters require different procedures, there are one or two points which are of equal importance on all of them. A sharp knife is essential for clean, accurate work. A good cut through every sheet can best be obtained by using a piece of pad back or chip board under the pile.



STANDING PILE ON EDGE JUMPING UP AND DOWN SEVERAL TIMES

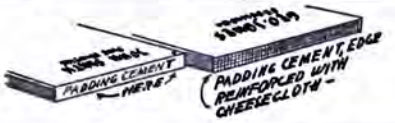
The paper or card stock should be jogged up into the left hand corner of the cutter bed. Before you bring the blade down, be sure your measurements are right, and that the paper is accurately jogged, because once it is cut there is no mending a mistake.

Padding

Straight, smooth sides on the pile of paper are essential for

padding. This may be accomplished by using a trough made of smooth boards, or the specially made troughs which come with padding outfits.

Padding outfits usually include a clamp which may be put on the pile after it has been jogged smooth in the trough. The pile can then be clamped and removed from the trough so as to expose its smooth side, and the composition



may be applied. There are a number of different kinds of composition, including both hot and cold applied. The compound is usually painted on with a brush, although some varieties are sprayed on. If in a clamp, it may be allowed to stand until dry. Lacking a clamp, the pile is weighed down, and compound put on.

After the composition is dry the pile may be split up into individual pads, either by guess, by measure or with the pad counter, a device with adjustable blade which enables you to make all the pads the same thickness.

Folding

While a good proportion of folding is done on machines, the printer will have some jobs too small to put on a folder, and he should know how to do them himself.

With your left hand bring the right edge of the sheet to the left side. The folder (or folding stick) in your right hand, insert it in the fold of the paper as you bring it over. True up the edges with your left hand, and with these secure, use the folder to crease the paper, running it from the edge near you to the back.

Further folds can be made in the same manner, the usual way being to make all folds from left to right, with the front page down on the last fold.

Lesson Thirteen—Questions

1. *Explain the three ways of designating the weight of paper.*
2. *How many pieces of paper 6 x 9 inches in size may be cut out of a 25 x 38 sheet? With how much waste?*
3. *Describe one method of counting off sheets from a package of paper.*
4. *How can money be saved in the use of paper or card stock?*
5. *What is the first essential for smooth cutting, and what will aid in getting that cut down through to and including the last sheet?*
6. *Describe the usual way for a printer to do his padding work.*
7. *Describe the quickest way for hand folding.*

The Printer's DICTIONARY

"L"

(Continued)

Lift—The quantity of paper placed on the press feed board at one time or taken from the press after printing —each portion of it—is called a lift.

Lifts — A type form which is properly locked up, justified, etc., is said to lift. In other words, it may be lifted without anything dropping out. Printers also speak of lifting part of a form and, perhaps, putting it in an other, or lifting a few lines or a paragraph for the same purpose. Last, but not least, of course, it is used in the same sense as the layman may use it — some unscrupulous publisher and printer may lift an article or story from some magazine and use it in his own without credit.

Ligatures—Two or more letters cast on one piece of type make a ligature. (fi, fl, ffi, ffl, etc.) In most cases ligatures are made because the overhang on at least one of the letters would interfere with the top of the other letter, and either prevent the type from fitting snugly or would break off the top of the overhanging letter. Where ligatures are provided, therefore, they should always be used.

Lightface—Type whose face is lighter than the average, that is, has finer and narrower lines thruout.

Line Gauge

Line Gauge—A printer's measuring stick, marked with picas and half picas (Nonpareils).

Linen and Linen Finish—While originally applied to paper made from linen rags, linen has come to mean any paper with a cloth impression on it. Such surfaces are either put on with rolls embossed for the purpose, or by running the stock between sheets of actual cloth and rolls. Linen finish in past years has largely lost its popularity as a writing paper.

Line Engraving

Line Engraving—An engraving made by the photo-engraving-etching process consisting of lines and solids, as contrasted with a halftone, which is made up of minute dots, and which uses these dots to reproduce photographs, wash drawings, and other objects to be illustrated in which shading not made up of lines appears. Roughly speaking, line etchings are made by photographing the drawing, print, or whatever is to be reproduced, transferring the image to a sensitized zinc plate, and etching (eating away with acid) those portions of the plate which are to appear as whites in the finished printing job, low enough so that ink will not touch them. The resulting plate is mounted on a block, and is then ready to use in printing, or electrotype duplicates may be made from the original line engraving, so that if by any chance the cut is damaged, the original will be unharmed. Line engravings are also called zinc etchings —"zincs"— altho coarse screen halftones are also made on zinc plates. See *Halftones*.

Line of Stars—A row of asterisks (***) used to indicate omissions in an article, story, paragraph or sentence of some part of the original text. Sometimes used to indicate that matter which looks like regular reading matter is advertising, altho the present law requiring that such matter be plainly labelled "advertisement" has largely eliminated its use for that purpose. For use singly, see *Asterisk*. Sold as part of the font of auxiliary characters, or separately as extra letters and figures, either by the number of pieces or by the 6-inch line.

COPPERPLATE GOTHIC, NO. 6001
COPPERPLATE GOTHIC, NO. 6002
COPPERPLATE GOTHIC, NO. 6003
COPPERPLATE GOTHIC, 6004
FOUR SIZES ON SIX POINT BODY FOUR

Copperplate Gothic, cast on Title Line

H H H H H H H H H

Examples of Lining Type

Lining Type — Type of various kinds, the bottoms of which all line with each other. Type on standard line, as may be inferred from the term itself, conforms to one standard which has been used by most manufacturers for a number of years, on most faces. Most type is on what is called common line. There is title line, also, which is cast much lower on the body, because there are no lower case letters for title line faces, and no letters with descenders have to be provided for. The Copperplate Gothics are all cast on title line, and this enables the foundries to get four different sizes of Copperplate Gothic on one body, the smallest occupying only the bottom of the body, and the largest covering it from top to bottom. There is also Art line, used on a limited number of very specialized faces. In the old days, before standard line was adopted, there was no assurance that two similar types would line at all — and usually they wouldn't. Like the introduction of the point system, standard line has been of great help to printers and type founders alike.

Specimen of a linoleum block cut

Linoleum Block Printing—The use of engraved blocks of linoleum for cuts, tint blocks, large lettering, (Dance, Ice) etc. The linoleum itself is mounted on blocks of wood to make it type high. Very similar to the wood cuts made when printing first came into existence, and now quite popular among artists for certain types of illustrations.

Lithography — Printing from a flat plate of stone or metal, which has neither raised characters, such as are used in ordinary (letterpress) printing, nor cut in characters in the plate (engraving).

Lithography uses the well known principle that water and oil do not mix. Also see *Offset Printing*.

Lithotone—Halftone made by a special process, in which lines, running one way of the cut, take the place of the dots which in ordinary halftones furnish the face of the cut.

Live Matter—Type matter which is not ready to be distributed into the cases, either because it has not as yet been printed, or because a rerun of it is expected.

Long Primer — The name formerly applied to 10 point type.

Lock-up—To lock up a form is to fasten it in the chase so that it is ready for the press. This is accomplished by quoins, chase screws, etc.

Lower Case—The small letters of the alphabet, so called because in a pair of news type cases, they are placed in the lower of the two positions on the top of the rack. The upper case (caps) occupy the position above. The cases themselves are also known by these terms.

Low to Paper—Cuts, type, etc., which are not type high.

"M"

Machine Finish — A finish on paper produced by the calender rolls of the paper making machine. Popularly known as "m.f." Our Standard White is an m.f. sheet. Not so smooth as super-calendered paper, but smoother than artique or eggshell.

Makeready—Literally, the making ready of the form for printing by the building up of those parts of the job which appear low in the first impression, and cutting down those parts which are high.

Make-up — Getting the form ready as far as is practicable before laying it out to put in the chase; spacing it out, grouping it, etc. Make-up comes after composition (setting up the type) and before imposition (doing the final work and locking it in the chase).

Printer's Mallet

Mallet – A species of wooden hammer, used by printers for taking proofs, planing down forms, etc.

Masthead—In a newspaper, the name and matter appearing beside and around it on the first page, in any other publication that part most nearly corresponding to the newspaper's masthead.

Matrix—The mold from which, in the case of type founding, the letter is cast. In stereotyping, the matrix is made of a special wood pulp or paper maché, which has been impressed with the type form, and in which the metal cast is made, which is used for actual printing.

Matter—Type, etc., which is set up. It falls into one of three classes; live matter, (ready to print); standing matter, (waiting further orders); or dead matter, which is ready to put back into the type case.

Measure — The width of the lines being set; the column width.

Minute Mark—The mark (′) to denote minutes or feet. Two marks (″) denote seconds or inches, as the case may be. The same mark is used as an accent mark when put over the top of a letter, as in "café".

Misprint—A printed mistake in spelling, letter upside down, etc. Any kind of typographical error. Some people call poor jobs of printing misprints.

Missal Letters — Initial letters made after the fashion of those used in the old missal books.

These are mitered corners

Miter—Pieces of rule beveled at the ends, so that when joined together, they form a corner.

Modernistic—Layout, type, etc., in the modern manner — which cannot be too closely described because it is changing as time goes on. There is, however, a very definite difference between the traditional, conventional typography and the so-called modernistic, the older being more regular in appearance, and the newer being characterized by more or less disregard of the old time layout balances, margins, type sizes, etc.

Modern Roman — Roman type with straight serifs and hairlines as well as heavy strokes in its makeup. This line is set in Century Roman, which can be classed as a modern roman. The word modern is used only in a relative sense, as it has been used for a period of a great many years.

Monogram Type—Letters made up in such a form that when two or more are put together they form an attractive monogram which has many of the features incorporated in an especially drawn design. Monogram type is made in sizes 24 points and up, and in a number of different styles, for one or more colors.

Monotone—Single tint or tone; in type, a style having the same thickness of line in all parts of the face is a monotone face. Don't confuse this word with monotype, which refers both to a composition machine and to the product of that machine.

Mortise—A space cut out in a block or cut, for the insertion of type or other material. An inside mortise is entirely surrounded by the cut, an outside mortise is one which has at least one side open.

Multiple Punch — A device for punching several holes in one or more sheets of paper at one time.

Multiple Punches

Moulds, Roller — Moulds into which the iron cores or rods of a roller are set, and into which the roller composition is poured and rollers thus cast.

Mutton Quad—Em quad..

"N"

Nick—The groove or groovcs in the lower front part of the body of type, which enable the person setting type to tell the front from the back without looking at the face.

(To be continued)

LESSON FOURTEEN

Envelope Printing

Envelopes, owing to the various thicknesses of paper at different points, often require a little more

Fig. 1

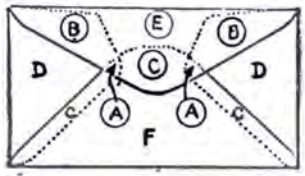


Fig. 2

Fig. 3

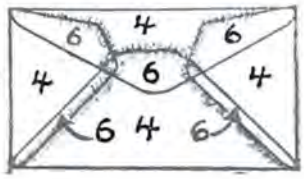
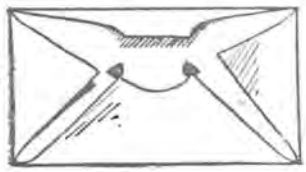


Fig. 4



work in preparation for printing than a job on a single sheet of paper. The overlapping and the gum which holds the flaps cause thick places which must be compensated for if the printing goes over more than one different thickness. Sometimes this can be avoided by opening out the flaps, particularly when the corner card you are going to print is small, and the envelope is "high cut"—that is, the top of the back side is almost parallel with the top of the front. In this case, you will be printing on two thicknesses of paper, but not two *different* thicknesses, so that the type will not be held off one part of the envelope by two or more thicknesses in one spot, and a fewer number in another.

When you do want to print on the flap itself, and the corner card will run over more than one different layer of paper, it is customary to take an envelope of the lot you are going to use and with the point of a knife or a pin, punch small holes through the tympan one at each upper corner and one at lower right hand corner. Take an impression of the work to be printed on the envelope on a single sample. This must be cut out so that when the cut envelope and an uncut envelope are laid on each other, the number of paper thicknesses at all points will be the same. Thus, at points A, on figure 1 of the illustration, there are four thicknesses of paper, and all the other points must be built up to this figure. Where the flap goes over at points B and C, there are three thicknesses, requiring one more to make up to the maximum four, and points D, E, and F, having only two thicknesses to equalize, require only two thicknesses more.

These cut-outs and thicknesses must be cut exactly, and it is therefore necessary to know just where the paper laps over. This can be ascertained by running a lead pencil at right angles with the joint, the same as you would take a rubbing of a coin.

You are now ready to cut out the skeleton envelope. A, having the greatest number of thicknesses, is cut out entirely. B and C having the next largest number, should

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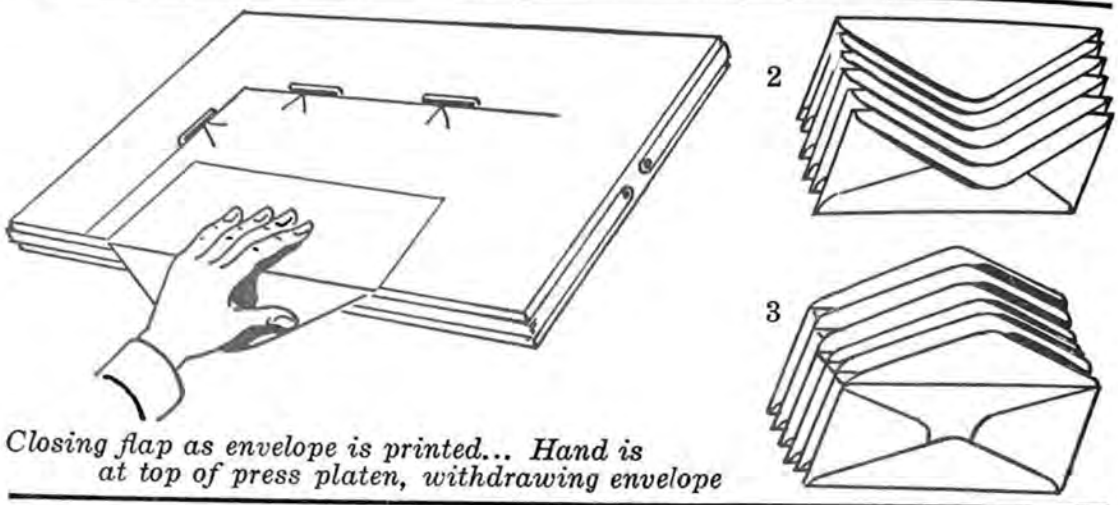
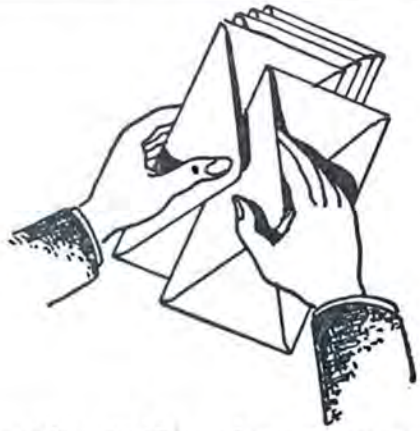


Closing flap as envelope is printed... Hand is at top of press platen, withdrawing envelope

have all but the front thickness cut away. D, E, and F have only two thicknesses, and are therefore left.

Paste the envelope thus prepared face up on the tympan sheet directly under the top sheet, being careful to match it with marks previously punched. If this is done correctly, you can print envelopes without any difficulty.



Operation 1 (See above for 2 and 3)

Envelope Feeding

Each printer has his own idea of the proper way to feed and print envelopes, but here are a couple of suggestions.

They may and often are printed with the flaps open or with the flaps closed. For printing with the flaps open the same technique is used as is practiced by large mailing firms before inserting the contents of the envelope prior to mailing.

This consists of taking a pack, breaking the band if they are banded, and, with the pack upside down in the palm of the left hand, moving the top envelope down so that it can be pushed under the flap of the next. Now move both down, and up, so that the second is under the flap of the third. Continue until the whole lot is finished, then bend all the flaps flat and open. Practice will enable you to open the flaps of a large number of envelopes in a very short time.

If the envelopes are to be printed head down, the flaps should not be opened, as the flap side is your guide or gauge edge in that case.

If they are to be printed right side up, and with flaps open, so as to avoid part of the makeready caused by the uneven thickness of paper, you can, if you wish, learn to close the flap as you take the envelope from the press. This is done by dragging the envelope, not picking it up, from the platen after the impression. As the flap leaves the top of the platen, the

thumb is slid underneath, pushing the flap to closed position.

If you prefer to close the flaps as a separate operation, prop the envelopes up in front of you, face forward. With both hands, one at each end, keep the envelopes upright with the thumbs, pushing down the flaps with the rest of the fingers. When you have a handful, squeeze them together and lay them aside or in the box.

Typewriter Facsimile Work

While a great deal of facsimile typewriter printing is turned out by stencil duplicators and machines like the Multigraph, printing presses have their place for such work. The large operators of mail order businesses rely heavily on printers.

A printing press will turn out such printing in several different ways. Some are straight printing jobs, that is, they are set up in typewriter type with uneven right margins, and run with regular ink on either bond or book paper.

Instead of regular spaces and quads, so-called justifiers, the same width as a typewritten character are used singly or in multiples.

If the copy which you are setting is not typewritten on the same size sheet or card as the one to be printed, you will find it helpful to run it off that way first on a typewriter to get the form it should take. This form should then be followed in the setting — spacing, ragged margins and all.

A second kind is set up in typewriter type with sharp face like the keys on an actual typewriter. Printing is done through a piece of silk or a silk ribbon, so that the facsimile is almost as good as the real thing.

For this there have been devices on the market for automatically feeding inked ribbon across the face of the type. The printer can get the same effect without this special equipment if he locks a piece of silk across the form, and uses a fairly soft ink (like book, news or poster). A few movements of the rollers back and forth over the form are necessary to load the silk with ink and get the impression coming right.

If the customer is going to fill in the letter at the top with names and addresses, it will be best to obtain a specimen of the work done by the typewriter to be used for the job, so that you can match it as closely as possible.

Any fine weave silk will do for use over the type, about the same weave as a typewriter ribbon. A piece of old Multigraph ribbon is exactly right.

If you buy new silk, wash it well with soap and water to remove any sizing or dressing in the cloth.

Some printers, instead of locking the silk over the form, sew it on the grippers, having set them well off on each side. Around fifteen or twenty impressions are necessary to impregnate the silk before the correct amount will show on the paper.

Some printers, instead of placing the silk between the type and paper, use a coarse weave linen on the tympan, either for the tympan itself, or directly under the first sheet.

It is also possible to run duplicator stencils on a printing press, although the incentive to do this is not so great because inexpensive duplicators are available.

For this work a block the size of the stencil to be run or larger is required, of poplar or some other wood which does not warp easily. A metal bound block is

better, and the thickness in either case should be about ¾ of an inch. Place on it a thin layer of cotton batting. Cover this with eight thicknesses of any cheap cotton cloth, and tack securely all the way around so as to avoid wrinkles.

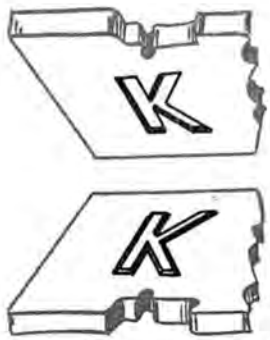
The pad is saturated with regular duplicator ink and locked in the chase. A typewriter stencil is cut in the regular manner, and placed on the pad. It may be fastened, but probably will stay in place without.

The work is then fed through the press (without rollers, of course) in the regular manner.

How to Do Real Embossing

Before reading this, it should be borne in mind that there are three different processes producing similar, although not identical results, namely: embossing, which we shall describe here, engraving, which uses an engraved plate instead of type, but which does not require a counter die, and plateless embossing or raised printing, which does not require a plate of any kind, using regular type, in connection with special inks and compounds, and the raised printing unit, a comparatively inexpensive layout, easy to use, which in most cases will produce the results you wish without the bother of either standard embossing or engraving. Engraving is not usually done with an ordinary printing press or ordinary inks. On the other hand, very fine facsimile engraving (as well as embossing) may be done with your press and the raised printing unit. Real embossing may be done with your printing press, and it is with this last kind of embossing that our article deals.

To do embossing it is necessary to have a special embossing die in which the design to be produced is *sunk in,* not raised as for ordinary letter press printing from type, cuts, etc., and, if the design is to be in color you will need a plate or form for each color to print in exact register with the die. Embossing dies are usually engraved in solid brass, by hand and are rather expensive. For simple, small designs, with a little patience you can make your own on the back of an old electrotype, by taking the electro off its wood block and cutting the die in the soft lead back.



MALE & FEMALE PLATES OF EMBOSSING DIE.

There are several compounds on the market for making the counter or male die, but for short runs, the printer can make one of his own which will be very satisfactory. Sift a small quantity of plaster of paris through a fine cloth and mix with clean flour paste and a few drops of glycerine to make a smooth stiff dough. Remove all packing from press and glue a sheet of cardboard in the platen. Lock the die in the chase and get an impression on the platen cardboard to show position. Spread a small amount of the prepared compound over this impression and, after oiling the die, close the press and let it stay closed for several hours until the composition is hard, or over night. If, when running the job, the die has a tendency at first to tear and cut the paper, feed in a piece of thicker paper which will take off the sharpness.

Lesson 14—Questions

1. *Describe how a "skeleton" envelope is prepared.*
2. *Why is such a prepared envelope necessary?*
3. *In typewriter facsimile printing how is the silk used, and where is it placed?*
4. *What is embossing?*
5. *What is the difference between engraving and raised printing?*

The Printer's DICTIONARY

Nickeltype—A species of electrotype which receives a plating of nickel before it is plated with copper, and which is more durable than ordinary electros. It should not be confused with a nickel plated electrotype, which is not equal in quality to the article which afterward receives the copperplate.

Nonpareil—The old name for 6 point type, and, with the pica and the agate, the only other names surviving after the introduction of the point system. Very often used, particularly by older printers, to designate 6 point measurements.

Numbering Machines—Automatic devices for printing duplicate, consecutive, triplicate numbers, etc., on printed matter. Hand numbering machines operate as the name implies, by hand, typographic numbering machines are put into the form in the chase, and the pressure of the platen against the figures makes the impression, at the same time furnishing the power to change the number in readiness for the next sheet. Numbering machines should not be confused with counters, which keep a record of the number of impressions without contact with the sheet or type.

Nut Quad—En quad.

"O"

Offcut — Scraps of paper left after cutting or trimming.

Off Its Feet—When type does not stand squarely on its base, it is off its feet. If the line of type is properly spaced, neither tighter nor looser than any other line, and is properly planed (smoothed or tapped), this will be eliminated. Type off its feet usually prints on one of its sides and not the other.

Offset—If for any reason an impression of the printed form appears on the back as well as the front of the sheet, it is offset. This very often comes from laying sheets one on the other when the ink is so damp that they transfer to the back of the next one.

Offset Printing — Lithograph printing in which the plate, instead of coming in contact with the paper, transfers the inked design to a rubber roll, and this in turn retransfers it to the paper. The use of offset makes it possible to print on rough surface papers which can not be satisfactorily used otherwise except for simple letterpress printing. Curved metal plates are used in offset printing, and because of the retransfer, all lettering on the plate reads as it does from the printed sheet, from left to right. High press speeds are possible from offset, as contrasted with ordinary lithography, which it is largely supplanting. Offset printing was done on metal (such as tin for boxes, cans, etc.,) before it was ever applied to paper printing. As in regular lithography, that part of the plate which is not to print is kept damp with water, so that the ink will not stick. On certain work it is possible to eliminate the water.

Oiled Sheet—An oiled tympan sheet on the platen, which will help to prevent offsetting when the reverse side of the job being printed is not as dry as it might

be. A piece of Kraft paper will do, with oil used sparingly so as not to injure the work to be printed.

Old Style—What is, and what is not, Modern or Old style is so controversial that we are purposely leaving out any strict definition. Old style is really an original Roman. Caslon, Bookman and Old Colony are all Old style faces. Roman faces unlike these are called by some Modern Roman, but the recent outbreak of Modernistic designs has made the term even more confusing.

Opaque—Papers and ink which are not transparent, that is, in papers, a sheet which cannot be seen through, and in inks, a color which can be printed over another and leave no indication of the color beneath.

Open Matter—Type and other matter with wide spacing, leaded out widely between the lines, or with many short lines.

Open Spacing—Wider than usual spacing.

Optical Center—A form will appear properly placed to the eye if it is slightly above true center of the page or card, it is then centered optically.

Out of Register—When two or more colors are used, and one or more of them is not properly placed, so that the different colors do not meet as they should, they are out of register. This may be caused by not feeding the sheet up to the gauges correctly, or it may be because something has shifted. On big presses, poor register is also caused by shrinking or swelling of the paper between the printing of the colors.

Overlay — An extra piece of paper put on the tympan at a point which requires more impression. The illustration shown in the *Printer's Guide* goes into detail as to how it is done.

Over-run—Copies printed over and above the amount ordered.

Over-running—When in correcting a job it is necessary to carry words or letters over from one line or page to another, either backward or forward, the operation is called over-running.

"P"

Packing—Sheets of paper or card under the top sheet on the platen of a press to effect the impression. The whole (including both packing, top sheet, etc.) is called the tympan.

Pad Back Board—Stiff board used for making the backs of pads.

Padding Composition—An adhesive substance used in sticking the sheets of a pad together. Padding composition must have the sticking qualities of glue, but it must at the same time be flexible enough to withstand cracking and bending. There are several satisfactory padding compositions on the market.

Page Cord — Twine or string used in tying up forms before and after they have been printed.

Panel—Part of a form set off from the rest, usually enclosed in a ruled or fancy border. Much the same as a "box."

Panelled—A sheet of paper or card with a portion indented to form a depressed surface or panel. Panels are used on announcement sheets, such as wedding invitations, and on personal cards, as well as on better grade work of many kinds. They may be produced on an ordinary printing press.

Pantagraph—A machine for reducing designs or enlarging them

in the same proportion. This device is used by makers of type designs for reproducing them in various sizes on different type bodies. By this means each letter, whether in six or in sixty point, is the same in every line and contour.

Paper and Card Cutter

Paper Cutter—Machine for cutting paper—made in many different sizes, from the very small hand variety to the huge affairs which automatically trim several sides at once.

Papeterie—Boxed writing paper, with envelopes to match. All stationery cabinets are, strictly speaking, papeteries, altho it is a term usually applied to the kind found in stationery stores and others handling similar merchandise.

Papier Maché — Material made from wood or paper pulp, glue, etc., which hardens when dried and may be used for a number of different purposes, such as stereotype matrices, for instance.

Parallel Rules—Rule made with two parallel faces on the same piece or body.

Parchment — Real parchment is sheepskin, so prepared that it may be printed or written upon the same as paper. It is, of course, very durable and hard surfaced, and is only used for documents where expense is a minor consideration and durability or permanence the governing factor, such as on the highest grade of diplomas, government papers, etc.

Parchment Paper — Originally applied to paper of the highest grade, made to reproduce parchment, but now loosely applied by many people to all sorts and kinds of paper with a surface even remotely resembling parchment.

Pasted Stock—Cardboard made by pasting two or more sheets of stock together. Very often the number of thicknesses is designated by saying that the stock is two ply, three ply, etc.

Patch Up — Pasting of tissue pieces on tympan sheet for making ready — overlay.

Patent Insides (or Outsides)— Ready printed sheets of miscellaneous matter for use by publishers of small town newspapers who either haven't the facilities or do not wish to take the time to set up their entire job in their own shop. The matter must of course be of very general interest because the same printed pages are used by a great many publishers, the manufacturers of these sheets being able to produce them very cheaply by selling them far and wide. Usually the whole newspaper is a four page sheet, and the ready-printed part is the second and third pages, the local publisher using the first and fourth for local news, set up and printed by himself. In that case it is a patent inside. If the first and fourth pages are ready printed it is a patent outside. There are fewer papers nowadays with patent insides or outsides than there were in years gone by, since many of the papers have gone out of business or have progressed to the point where they either set up their whole publication or indulge liberally in "boiler plate" — plate matter similar to the material used in the patent

insides, but furnished in plate or mat form so that it can be distributed anywhere in the paper that it fits satisfactorily. Sometimes the maker of the patent inside puts advertising in it.

Path Line—Lines made in correcting proof, which connect the error or change with the correction made in the margin.

Pearl—Five point type under the old size designations.

This is Pearl---five point No. 055

Perfecting—The printing of the second or reverse side of the sheet —"backing the sheet up."

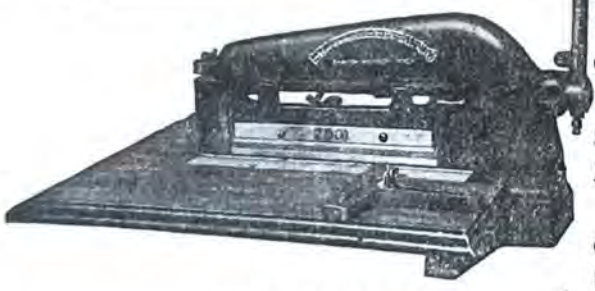
Perfecting Press—Large newspaper or magazine machines which print both sides of the sheet in one operation. A web perfecting press prints from a roll of paper, this being the method used now for all newspapers of any size.

Perforating — The cutting or punching of a line of holes or slits in a sheet which will enable it to be easily torn along the line made.

Perforating Rule—Rule of steel or brass made to produce perforated lines.

Perpetual Calendars—Fonts of material, including figures, names of months, days of the week, etc., made so that they may be assembled into a calendar of any month or any year. Some fonts are made to cover one month at a time, others are made to cover a complete year at a setting.

Perforator—A machine for making perforations in paper or cards.



A Perforator

FRI 19 TUE 23

Perpetual Calendar characters

Photo-engraving—Any plate for printing made thru a combination of photography and other chemical processes. A woodcut or any hand-made cut, even tho reproduced from a photograph, is not a photo-engraving. See halftone, line engraving, etc., which are true photo-engravings.

Photogravure—Often called gravure · a method of intaglio printing thru the use of a copper plate, with the elimination of the screen used in halftones (see halftone). The copper plate is treated with a dust which is partly melted on the plate so that it forms a grainy surface. The etching is done thru this surface, and after various processes all soluble matter is washed away, leaving the copper plate with the design etched on it. The grainy surface, which has been cleaned off in the process, furnished the holes or minute spots thru which the acid etched or ate into the plate. Gravure printing cannot be done on ordinary printing presses, nor can it be turned out with the speed used in ordinary printing, altho the advent of Rotogravure has furnished a similar process for high speed work.

Pi—Type that has become mixed or jumbled together in such a way that it can not be used until it is sorted out. It may be all of one size and face, or a mixture of a number of kinds.

(To be continued)

LESSON FIFTEEN

A Little History

Type design is a subject which in detail is beyond the scope of a strictly utilitarian course on printing, but you need to learn enough about it to select type intelligently for varying kinds of work, and know the reason for picking one face instead of another.

Previous to the use of printing, when books were hand lettered, styles were limited to those which were possible with pen or brush. The first printing-type designs followed closely on the hand lettered (calligraphic) models, and some time elapsed before any effort was made to break away or take advantage of the new art by creating letter designs which could not be easily fashioned by hand. The best of the early type founders refined the hand designed characters to some extent, but went no further.

Claude Garamond, the famous French type founder of the sixteenth century, was the first to cut loose from the limitations of hand lettering and realize the possibilities which punch cut and cast characters offered. Nevertheless, type designs in each country for many years reflected the calligraphy prevalent when printing first was introduced, and as the lack of easy communication in those days had caused hand lettering to follow individualized lines in each country, there was quite a little type style variation in the different printing centers of Europe.

English type designs up to the eighteenth century was uniformly poor, and most of the type used in America at the time came from England. William Caslon was largely responsible when a change occurred for the better. He drew on Dutch models, but added enough himself to make the credit almost exclusively his. Caslon's type we still have with us, and the 200 or more years which have gone by since its introduction have not affected its popularity in the slightest among those who know good type.

Caslon's characters followed the oldstyle tradition, that is, the lower case has a sloping top, and the tails on lower case letters turn downward.

So-called modern roman can be distinguished from oldstyle roman because the tails of the letters are straight. Other differences can be seen by comparing the two in the lines herewith. The modern and

AEOTefhmy

Goudy Old Colony (oldstyle)

AEOTefhmy

Century Roman (modern)

oldstyle definitions have no significance in estimating the age of a designer, however, because Bodoni and Didot both were active in the late 1700's, and while they were the originators of the characteristics which identify modern roman, the faces which have since been made by type founders have carried on both traditions. Goudy is an oldstyle face, and is in fact called Goudy Oldstyle, but its actual designing and first sale came in the twentieth century.

If you are interested in printing and type history, you will find several books on these subjects in most libraries. They are of help

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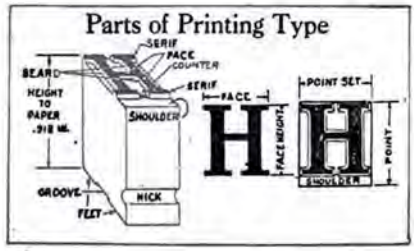
as a background for any printer. Among the good ones, and by no means heavy reading, is "The Golden Book" by Douglas McMurtrie. However, any volume of printing history which you can pick up will not waste your time.

How To Know One Type From Another

It's customary in most educational matter on printing to confront the learner with a specimen picture of a large piece of type, the type founder's name for all its features being shown. We bow to tradition by doing the same. However, not all the terms shown are of importance to the printer. He needs to know what a serif is. These little finishing touches which appear on all faces except script or sans-serif (American name, Gothic) faces are fairly evident in the picture. The nick is important, because by it he tells whether the character is right side up or upside down in his fingers. Pin marks are becoming the exception rather than the rule as type founders cast their type on high speed machines whose moulds have no pin marks in them. It's a good idea to know what the shoulder is, because the size of the shoulder determines the way the type "lines", that is, whether it will line with other faces or not. Type line is covered in another section.

One of the distinguishing characteristics of actual foundry type is the cleanly trimmed-out groove in the bottom, which give the type two well defined feet, and makes it less likely to fall over and pi. Most composition-machine type lacks this advantage. Foundry type is made by squeezing metal into a mould which has an opening right where the groove in the type is. The jet, or "gate" as an ironfounder would call it, which is the surplus metal at the point where the groove is placed, is broken off and the bottom of the type trimmed. Being in the center, the type founder's machine is able to give more equal pressure throughout the mould than on composition machines, whose intake is usually a little to one side. Foundry type is, therefore, more solid, and the trimming operation in the center makes better feet at each end and more stable type.

The alloy used in true foundry type is harder than composition machines are built to take, so between better pressure and harder metal foundry type has good reason for being longer lasting.



Foundry type can be made harder, not only because of the metal alloy itself, but because it is made on machines built for higher pressures and temperatures than are possible on composition equipment. To produce a tightly compressed, fine grain metal, casting must be at high temperatures under high pressure in a water cooled mold. The same metal used in ordinary composing casters will not make as hard or durable type. Each has its place, however, and no reflections should be cast on the different kinds if they are accurately made and used correctly.

Various Kinds of Composition-Type, Linotype, Monotype, Etc.

Linotype is cast on solid slugs of metal the same length as the lines of the work itself. A keyboard is used for setting the lines. The Linotype was the original practical composition machine. The Linograph and the Intertype are trade names for two other similar machines.

The Monotype uses a keyboard to make perforations in a ribbon. The ribbon is then fed through a casting machine which translates the ribbon and casts the line, but each letter is an individual piece, as with foundry type.

Both Linotype and Monotype styles of machines are limited to the smaller or body faces for regular run of the machine, but most makers also provide so-called giant casters for supplying the bigger sizes. In addition there is the Ludlow, which provides big type through means of setting matrices in a stick, which are then transferred to the caster, and the line cast. These machines all help to speed up production where the quantity of work in the various categories makes them worth while.

The Various Kinds of Rule

Years ago the art of using fancy rule and scrolls reached a high point from which it declined because the taste used on much of it was exceedingly dubious. Rule, however, has a very definite place in printing, and not just in ruled forms, either. Its use to underline a word, group of words or title line is often helpful in giving emphasis, or in making the line or words stand out. Such underlining is particularly needed in selling copy. The prevalence of display lines in such printing otherwise has a tendency to bog down the message, one line neutralizing the other.

As in type, there are several grades of rule. First comes brass rule, which is the longest wearing. It is made in a wide variety of styles. Next is foundry metal rule, which, like the brass, is made with great precision, but is available at a much lower price. Foundry rule is liked by printers who maintain the non-distribution system — that is, never use material over, but throw it into the melting pot. It is made of metal suitable for mixing with machine composition material. Last comes the many varieties of rule cast on composition machines, both by printers and by firms specializing in machine composition. Foundry rule is good for many more forms, just as foundry type, if the printer wishes to keep it, but composition rule is best used on one job and thrown away. As with type machine composition, the quality varies widely, depending on the operator and the condition of the machine.

How to Learn to Be a Fast Typesetter

The following rules, if faithfully observed and practiced will in an astonishingly short time make a rapid and accurate compositor of you:

1. First you must thoroughly learn the location of the letters and other characters in the case. This can be done by marking each box with a lead pencil, using the diagrams (page 2 Lesson 1), each of which is known as the "standard lay" for that kind of a case. A good way to practice learning the case is to take a sheet of printed

or written paper and stand in front of the case. Now look at the first line of the printing or reading (called "copy") and keep it in your head. Now try and imagine that you are setting the type but instead of holding the stick in your hand and actually picking up the type, just point your finger at the box. Practice this and you will learn to find the location of any character in half the time required by the usual method.

2. After you have gotten so that you can instantly point out any character in the case without hesitating, it is time to practice speed and accuracy in actually setting the type.

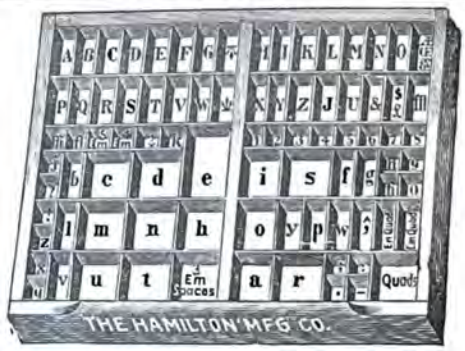
When you pick the letter up, do so with a swift, stabbing motion, getting a firm hold on it. Do not reach down and gingerly take hold of it as if you were afraid it was hot and going to burn you. Grab hold of it, using plenty of "push" to get a firm grip on it.

Before you set each word, run over the location of the boxes in the case for that word in your mind. This will help you wonderfully and soon you will do this without actually making the effort to do so. Always keep your mind a letter or two ahead of the one you are setting. This will give you a start when you reach for the next letter.

When you look at the letter you are going to pick up, note the position in which it is lying. Pick it up, but do not twist the hand as you try to put it in the stick with the nick uppermost — instead, roll the type between the fingers and it will take its place with much less effort and very much quicker.

When you pick the letter up, place it in the stick by "feel" — that is do not look at the stick but instead, after you have picked it up, rolled it into the proper position with the fingers, glance ahead to the box containing the next letter you want to set. You can soon learn to place the letter in the stick without looking at it. It is like putting your hand in your hip pocket. You do not have to look at the pocket in order to do so.

Summing up, the thing to do is to pick the letter up with a firm, rapid motion, after first noting how it lies in the case, so that you will know whether to roll it to the right or left in the fingers, and set it in the stick without looking at it from the instant you reach for it. The secret of the whole thing is to be able to instantly glance ahead to the next box after you start your fingers down toward the letter you have selected. As you pick up the letter and put it in the stick without looking at it, you are selecting the letter you will pick up from the next box and as your hand comes back from the stick, you start it down toward that letter and glance ahead to the next one. The hand is always one letter behind the eye. In starting to practice these rules, it is advisable to take your time, don't "crowd" yourself in an effort to be speedy. If you thoroughly learn the fundamental rules and are complete



Standard lay for California ⅔ Case

master of them, you will acquire the speed in a very short time. Remember — accuracy is much more desirable than speed in composition, for it often takes many minutes to correct a mistake that takes only a few seconds to make. Be careful, work **just below** your fastest speed and make up your mind to master each and every one of the above suggestions until you know them backward, forward and through the middle. If you do, you can't help but make a good compositor.

3. In putting the type back in the cases, which is called "distribution" or in printer's slang, "throwing in", you will at first find it easier and more accurate to take a word at a time between the fingers of the right hand, with the fingers pretty well toward the bottom of the type and after rubbing the fingers over the type to loosen it well, run over those letters in that word in your mind and locate them in the boxes where they belong — then distribute the word. You will find that your hand will follow right along over the trail that your mind has followed a few seconds before and will not falter or hesitate. Of course, it is not necessary to do this after you have had more experience as you will do it without thinking about it, but in the beginning it is a big help.

Type Alignment

In order to make it easier to use more than one face of type in the same line where necessary or desirable, all standard foundry type is cast on "standard lines"—or Point Line, as it is sometimes called. This means that type cast on the same line will line up at the bottom, although not necessarily at the top, because part of the variation and diversity in appearance of type faces is caused by their differences in size. That does not make so much difference in setting—it is just the lining up at the bottom which is desirable if two styles are to be mixed in a line.

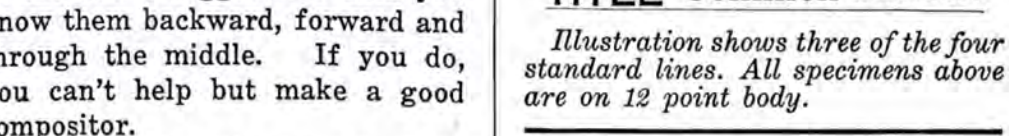


Illustration shows three of the four standard lines. All specimens above are on 12 point body.

There are four standard lines being used at present by type founders. There is Common Line, Title Line, Art Line, and Ultra Line. Common Line, as is indicated by its name, is most used. Title Line, as its name implies, is used for such faces as Copperplate Gothic and those faces having no lower case letters. Art Line, which used to be called Script Line, is carried on Kelsey Script, Society Roman, and similar faces having longer than ordinary ascenders and descenders. Finally, there is Ultra Line, which we are not using, but which is necessary on some founder's type having extraordinarily long ascenders and descenders.

Title Line is lowest on the body, Common Line comes next, then Art Line and finally Ultra Line which is way up. The system is called Point Line because all sizes can be justified so that the bottom of the letters will align by the use of one point leads. Also, different sizes of Common Line, such as, for instance, 8 and 12 point, will align by using one point leads.

Type cast on other than standard foundry machines is very seldom on Standard Line, with the

result that it is harder to align. Very old type, made before the Standard system was adopted, has, also, large variations. One of the advantages of buying standard foundry type is its uniformity of line, with consequent interchangeability.

Putting Type and Other Material in Mortised or Cut Out Electros

We have been asked about inserting type in mortised cuts. Of course, when an electro has a cut-out space in it, tightening up the impression screws, or quoins, if you use them in your chase, does not have any effect on the inserted matter, because it is entirely surrounded by electro, and there will be no squeeze on it unless you put entirely too much pressure on the form. The "locking up" of the inserted material, as it might be termed, must be accomplished beforehand. One point leads, cardboard and paper are all handy for this, as well as brass and copper thin spaces. Put the material in the mortise, and then estimate about how much spacing material you will need to fill it. Cut the pieces, and then lift the cut up from your flat surface (chase-back if you are using that for an imposing surface) just far enough so that you can test the type and spacing material all over with your finger for loose pieces. After you have found out the points which still need wedging, cut up paper, cardboard, one point leads, brass or copper spaces of the estimated amount necessary, and, first removing one of the bigger pieces so that your small stuff will not buckle or bend up when you insert it, fill in the right place, then put back the material you took out. You may find that several tries are necessary to get everything tight, but it will be a whole lot easier to do the job beforehand than to have the type "work up" while you are printing, perhaps to break off or to damage your rollers.

Make a good tight job, and you will have no more trouble with a mortised cut than any other electro.

We might add that both bodkin and tweezers are invaluable helps in working around small space like mortises or cut-out electros.

Lesson 15—Questions

1. *Describe the differences between foundry type and machine composition type.*
2. *What is meant by, 1.) Title Line, 2.) Common Line, 3.) Art Line?*
3. *What is meant by Point Line?*
4. *What is a Linotype?*
5. *Name some of the differences between modern roman and old style type faces.*

The Printer's DICTIONARY

"P"

(Continued)

Pica—One of the few designations of type used before the advent of the point system of measurement which have survived that change. A pica is twelve points, and there are approximately 6 picas to the inch. Measurements of various kinds are expressed in picas—to be more exact, pica ems, but as the em is the square of any given size, a pica em is also a pica wide. When a column is said to be 12 ems wide, it is understood to be 12 pica ems wide, unless otherwise specified. See definition

of EM. Reglet is most commonly used in pica and nonpareil (6 point) sizes.

Pick—Sometimes very stiff ink will cause minute pieces of paper from the sheet being printed to tear away and stick to the type. This is called picking. Coated paper is particularly susceptible to picking.

Picking Sorts—If you run sho of any letter when you are setting up a job, and take them out of some other job which you have set up, you are "picking sorts."

Pick-up—Type and other matter all set up from another job, which is used on the job in hand.

Piece Accents — Accents made on a separate piece of type from the letter, so that they may be fitted over the top of letters which cannot be supplied with the accent and letter on one body. These are piece accents. ′ ″ ` ´ ¨ ^ ¨ ´ ~ ° ″ •

Pigment—That part of printing ink which furnishes the color.

Piece Fractions—Fractions made by putting together two or more pieces of type. These are made particularly for fractions not commonly used. ¼, ½, ¾, etc., are common fractions, hence are made on one body, but 16ths, 32ds, 9ths, etc., are so seldom used that it is necessary to make them from separate pieces. 1/32 1/9 1/16 1/5 1/7 1/5 1

Pinmark—Mark on the side of a piece of type, either to show its size in points or indicate who manufactured it. This is gradually being abandoned by all manufacturers as new matrices are made, for reasons connected with production.

Planer

Planer—A block of wood with one absolutely smooth, flat surface, used in smoothing (planing) down the surface of a form (of type cuts, etc.)

Planography—Printing by offset, a branch of lithography.

Plate—Any kind of cut, electro, halftone, etc., or solid metal faced printing surface. For instance, an electrotype of a type form, or of a combination type form and cut is a plate. Forms made up of type, linotype or other slugs are not themselves plates, altho plates may be made from them.

Plate Finish—Smooth finish on paper or cardboard.

Plateless Embossing—A method of making regular printed work look like plate embossing. See embossing.

Platen—That part of the press on which the paper is placed for making the printed impression. The building up of the impression, both thru impression screws and make-ready (spots of paper) is usually done on the platen. The paper packing on the platen is called the tympan.

Platen Press—A press using a flat surface or platen for making the impression on the paper. A job press.

Playing Card Indicators

Playing Card Indicators—Spades, hearts, clubs and diamonds cast in type form for use in printing playing cards, either the regular variety or special.

Ply—Used to designate the thickness of cardboard. Originally this referred to the number of thicknesses or plies. Our heavy cardboard is four ply.

Points—The punctuation marks (.,?;:-!') are called points.

Point Set—Type whose width is in multiples of points. This has recently been extended to spaces and

quads. The use of point set makes it much easier to justify (properly space out) lines of type.

Point System — The printer's scale for measuring type. This took the place of a series of names, many of which are being described in this dictionary. There are approximately 72 points in an inch, one point actually being .0138 inch.

Position—The location of matter in relation to the rest of the paper or page. Advertisers are especially particular about position, which means to them next to reading matter if possible, with other variations depending on what the advertiser in question thinks is good position for him.

Post Card and Postal Cards—Postal cards are the official government cards (one cent for ordinary use) whereas **post** cards are those made up and produced by printers, which are also mailable in the U. S. A. at the same rate, and may have quite a little variation in size from the official **postal** card.

Power Fixtures—Shafts, pulleys, etc., used in operating a job press by power.

Preface—An article in the front of a book giving the origin and purpose of the book, usually by the author.

Pressboard—Especially made hard, shiny cardboard for good make-ready on the platen.

Press Proof—A final proof made after the job is on the press.

Primary Colors — Red, yellow and blue are the primary color, and with these any shade or color desired may be made. For practical purposes, however, it is best to have black and mixing white, and most printers also keep green, orange, brown and purple on hand ready mixed.

Printer's Devil—The boy-of-all-work around the printshop.

Printers' Marks—The trademark of the printer, a practice dating back almost to the beginning of printing. The devices of ancient printers have often been adopted with modifications by various printing craft organizations, and modern printers have likewise borrowed heavily from that source in designing their own marks.

Process Plates—Three or four color halftone plates, one each for red, yellow, blue and usually black, which, because they are, aside from the black, primary colors, enable the printer to produce a printed job in a large variety of tones, shades and colors. Practically all the magazine color work which you see, in spite of the great variety of coloring, is done with three or four plates in the manner described. In printing, the red and yellow when printed over each other produce orange, the blue and yellow make green, etc. Process plates are very expensive, require absolutely perfect register, and are not advisable on small job or platen presses.

Proof—Any kind of preliminary or trial impression, made for inspection or correction.

Proof Planer

Proof Planer—A planer with a felt or other pad on the smooth surface, used for taking proofs.

(To be continued)

LESSON SIXTEEN

Making Layouts

Before actual work is begun on a job, some plan for proceeding should be made, and this can be accomplished, and much time saved, with a simple pencilled layout. For the layout take a piece of paper the size of the card or paper stock you are going to use on the finished printing. You can get a much better advance idea of how the job will look if this is done. Another way is to use an oversize sheet, with the actual page size ruled off in one corner, the rest of the sheet being available for notes as to type styles, sizes, etc.

With the copy or matter to be printed in front of you, make a rough pencil outline on your layout sheet of the way you think the lines should be placed, approximating the type sizes, spacing, etc. For the parts with comparatively small text matter, lettering out will not be necessary, but you will want to be very sure, before you start work, that the size type you have selected for such parts is neither too large nor too small for the space allotted.

Try several different layouts for the same work, and compare them so that you can pick out the one which seems best. If any of your previous work is similar, pull out samples to put side by side with the layouts. They may enable you to avoid unsatisfactory arrangements, or adapt the best ones for this new job. There are dozens of possible arrangements for most projects, so you may wish to cut loose from any of your previous layouts, no matter how well they appear in the finished product.

Take even a simple business letterhead. There was a time when there were well beaten and standardized approaches to such a job. It might or might not have a lot of extra information scattered around at top, bottom or even on one side, but the main facts — name of company, business and address usually took top center billing.

That arrangement still applies for many, but it is no longer a must. Modern practice has freed printers from most of the restraints which used to be in force. Of course, a lot of the stuff perpetrated is merely bizarre, and some downright silly, but many useful arrangements can be worked up which are modern without being freakish.

For making layouts you will find an idea file most handy. This is nothing more complicated than a set of boxes or drawers in which you can keep specimens of all kinds, classified to make them easily accessible. One may be letterheads, another cards, a third tickets, a fourth programs, etc. If, when you run through a magazine you see a page either of advertising, or anything else which shows skillful use of type for a given purpose, save it. Keep samples of your own work, as well as those of other printers which come your way. Without attempting to copy them, you can acquire ideas which will help you to improve your typography.

Type Sizes To Use

Remember, that in general, the most important lines or pieces of information take the largest type, but that is only relatively speaking. Assuming that the work in

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hand is a letterhead, the name of the firm will probably be largest. The next most important lines may or may not be the address, depending on the wishes of the customer, but assuming he is agreeable, the city or town, and perhaps the state, are the next largest, even though street and number may come ahead of them on the layout. We may have, then, the firm name (24 point), street and number (12 point) and city and state (18 point). Or the sizes may be larger — 36 point, 14 point, 24 point. They may even be smaller — 18 point, 10 point, 12 point, but the relative importance of the information ought to be evident in the type size.

It is not necessary to use a different point size for each. Often the most prominent can be set in all caps, with the next most important in caps and lower case. The effect of a difference in size will be gained just the same.

If phone numbers, or other details are required, they are likely to take smaller sizes of type than the address already discussed, although sometimes, if the street and number are small enough, the same size may be used for some of the other information.

Now, having gone into the subject of type sizes, get as many letterheads together as you can which have a finished, professional appearance and you will quite likely find several which do not follow the above outline. From this apparent contradiction you will gather that there are plenty of exceptions. The customer may wish to feature a trade mark, a slogan, some article of manufacture. The ordinary sequence of lines and sizes can, in such cases, and often does, go by the board. In our hypothetical letterhead we did not comment on the type size for the line of business, or product. Finally, our letterhead will be "traditional," that is, in good taste, but strictly in accord with good typography as it has been practiced for many years, and as it is still being practiced. However, we cannot ignore a style which has grown up alongside and parallel to it in the last few years, and which for want of a better name is called Modern. This other method makes free use of scripts, tall condensed types, black faces for a word or two of emphasis, lines set askew, bleed pages (lines or cuts running off the margin), and so on.

But to get back to our letterhead. If made up in the traditional manner, the business, product, or whatever the extra line may be, is often run in another color, perhaps a size smaller than the firm name. In other cases, if a one color job is desired, the firm name may be in caps, with the added line in caps and lower case of the same size or slightly smaller.

Now, suppose, we are still sticking largely to the traditional, but are willing to nod toward the modern. We can set our extra line in script, or in a tall condensed face, either the same color or a contrasting one. A good italic will do, although it more nearly follows the traditional rather than modern. Nevertheless it is good, especially with a long, large cap line for the firm name.

As for arrangement of the letterhead, the possibilities are endless.

Experience is the best teacher. There is no substitute for:

1. Experience.
2. Observation.
3. A sense of balance and correctness, which should be acquired from the first two.

Constant practice, either with material or copy for actual pieces of printed matter which you as a printer must produce or with imaginary jobs which you can work up yourself, will bring you closer to the goal for which you are striving. Another way is to take actual printed matter turned out by either others or yourself, and see what you can do to either improve it or make an equally good but different layout.

Over a period of time, from your practice, and your notice of how others do it, you will be able to tell whether a layout needs altering. You will know whether certain lines should have more space between them, or should be closer together. You will know whether some lines require larger type, or smaller. Your sense of fitness will guide you in the arrangement. Your newly acquired instinct will tell you when alterations are required, and you will be able to make them. This knowledge will come to you almost unawares, and when you do realize that you can make, correct and execute a layout for a nice printed job you will get a lot of satisfaction out of your accomplishment. It will also be worth money to you.

But that part of the printing art is something which you will have to do for yourself. Just keep practicing, and you'll get there.

Layout and Spacing Are Important

Perhaps, outside the actual operation of the press, the point that needs most treatment for all but the most experienced printers is the layout of the work — the proper spacing between lines on tickets, programs, and work in general. This, more than other questions, will require some observation and experience. Here is where an accumulation of printed matter from various sources is of great help, not only to the beginner but oftentimes to those who have had considerable experience. Not only can you find out the correct way thereby, but you will get ideas which may be adapted to the work you wish to do, and as time goes on, your eye will become trained to distinguish a well balanced layout from a poor one. Never pick up a piece of printed matter without looking it over from the printer's standpoint, aside from any interest you may have in reading it. However, don't necessarily use newspapers and newspaper advertising as a guide, because, except in the larger cities, insufficient attention is often paid to typography. Many small and even larger printers are a little careless as well, but you will soon develop an eye for the right proportions and be able to do a little criticizing yourself.

No hard and fast rules can be laid down, and the space required for an adequate exhibit of examples would mean a large book for that alone. Following along the book idea, you may find it worth while to make a scrap book of the best examples to which you can refer when in need of help.

Where Should the Form Be Locked in the Chase?

Many printers are inclined to lock the type form in that part of the chase which will make the job most convenient for feeding the sheets, or cards, as the case may be. This is probably all right on a small card, stationery or similar job where makeready and impression are not troublesome, but when larger or more solid forms are to be run, a more scientific way of deciding will save time and trouble.

Most printers will say that the proper place for the form is slightly below center. That should be amplified a bit. The *heaviest part* of the form should be slightly below center. This may bring the actual center of the form considerably above, below, or to one side of the center of the chase.

This is done for various reasons, the chief of them being that the press will stand considerably more strain in the center without "giving" at all. The center is also the point of best ink distribution. By so setting your form, you not only avoid unnecessary strain on your press, but you make more sure a smoother impression without needless makeready or fussing with the impression screws. You also get ink distribution which may save you a lot of trouble on that score. It will not eliminate all use of impression screws or makeready, but it will help.

If in doing a job using a sheet of paper or card which projects out on one side of the press, you find difficulty in using gauge pins in the ordinary way, you can put a piece of stiff cardboard in the tympan, which is wide enough to extend out beyond the sheet you are feeding, and provide in this way for a place to put your gauge pins. Some printers have a piece of thin sheet metal which they use in place of the cardboard and in that case they glue or paste quads on the metal sheet, for gauges.

In any event, it is best to use the center of your chase as much as possible, and thereby get the best possible results at all times with as little work as possible.

Getting Perfect Register for Color Work

Quite often you will see a job of colored printing which is blurred, because all the colors were not printed perfectly, one over the other, — in printing terminology, the "register" is poor. Where the job consists of type only, or where the cuts are all of one color this lack of proper register does not show up so much, but if you are doing a job where there is more than one color in a cut, perfect register is absolutely essential.

Poor register is sometimes caused by not feeding the sheets up against the gauge pins carefully. Accurate feeding can be done quickly just as well as slowly. Remember that if you are doing a really good job, all the sheets which are poorly fed will be wasted. Multiply this by the number of colors being printed (because rarely will the poor impressions come two on one sheet) and it makes quite a factor in the cost of the job.

A second cause of poor register is the creeping of the gauge pins, which will probably not be great enough to bother on single color

jobs, but which may be decidedly troublesome on close register work. This can be guarded against by melting a little sealing wax on the pin and the tympan padding in such a way as to bind them together, yet not interfere with the feeding of the sheets. The wax should be on the opposite side from the sheet—below the sheet on the bottom pins, on the outside edge on the upper pin. Be sure to do this before you start running the job in the first color, but only after you have found the correct point for the gauges.

There is a very slight chance that the chase may weave just a hair from one side to the other during the printing. A couple of wood wedges driven into the very slight space between the chase and the roller tracks on the chase back will make double sure against that.

For the rest, be sure that your job is securely locked into the chase, altho do not tighten up on it so that the chase will bend and perhaps break. Any change in the register of one color from the other, if you have taken the other precautions mentioned, is quite possibly caused by the squeezing of the form when locking up, and must be taken care of accordingly. It is customary on type jobs of more than one color, to make up the whole form just as if for one color, take a proof, and then lift out all but that part to be printed in the first color, replacing the type taken out with quads or furniture of exactly the same dimensions as the removed material. Metal furniture rather than wood furniture should be used for this if possible, or the 2x4 quotations. If you know the number of points you are taking out, you can be sure to put in the same amount of quads, quotations or furniture, even tho the unlocking to do so has spread the form. When the next color is to be printed, lift out the old material, replace in the same way, and lock again.

Excelsior presses will give perfect color register. We have had many complimentary letters and nice looking samples to prove it. A little attention to the points mentioned above, which are necessary on large as well as small presses, will repay you many times, and earn for you the reputation of being a first class color printer.

Large Forms and Solid Forms

When planning work, quoting or accepting jobs for his press, there is one point which every printer should keep well in mind. If the proposed job has a halftone picture or other solid block in it greater than 50% in area than the area of his chase, that job is not for him. Many printers do not realize the tremendous difference between a so-called solid form of type and a halftone of the same size. Actually, the solid form is anything but solid and does not require anywhere nearly the same amount of ink capacity or impression as the cut. The press's ability to deliver depends not on the size of the form but on its density or openness. While inking is a factor, impression is important, too. The experienced user of any platen, gordon or clamshell type of press, will keep solid work within 50% of chase size.

When a large halftone is used (and by large we mean one not larger than the 50% already mentioned), it will often be found

best to run the cut separately from the type, if you want a really fine job. The reason for this is the necessity for carrying a heavy amount of ink for the cut—more than needed for good results from the type. Even larger cylinder presses will turn out work which frequently shows the results of getting enough ink on the form for the cut — too much for a really first class impression of the type.

A careful job of makeready will enable you to get better results with less ink on bigger cuts, type forms, or combinations of both. Resist the temptation to load on impression which will show on the back, and use makeready. There will be less wear to the type and cuts, less ink will be needed to get a good job, and the labor of making the impression will be less. Even more important, the appearance of the job itself will be better.

Lesson 16—Questions

1. *In selecting type sizes for a given job, what is the basic point to remember?*
2. *What is the chief difference between traditional and so-called modern typography?*
3. *Take four different pages from any national magazines, and draw up a rough layout for each, so as to get a little practice from work already done. (At least two should be advertising pages.)*
4. *Having done #3, make several entirely different possible layouts for the same pages.*
5. *Assume that you are in some line of business, and make up a layout for your letterhead, envelope and an advertisement to go in a magazine or newspaper. Make one set in the traditional style, and another in so-called modern.*
6. *With what type you have at your disposal, set up as many of your layouts as you can, one at a time, then arrange and paste them up. Make such alterations as you think best in the spacing, and even reset in other sizes, if you find that your original choice can be improved upon.*

The Printer's DICTIONARY

"P"

(Continued)

Proofreader's Marks—Marks used to denote corrections or changes in copy of matter set in type, as shown on next page.

Taking a hand proof

Pull a Proof—To take a proof. The term probably originates from the time when old type hand presses were used for all printing, and the sheet of paper, after being impressed, was pulled from the form by hand.

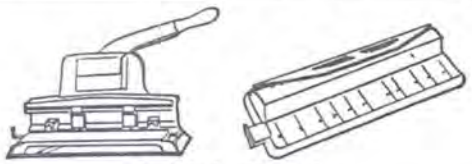
Pull-Out—When the action of the rollers draws anything out of the form, such as several pieces of type, for instance, you have a "pull-out." Poor locking up of the form will cause pull-outs.

Pulp—The half-manufactured material from which paper is made, ground from rags, wood, straw, grass, or whatever base the particular paper calls for. Cheap

Proof Readers' Marks

✕	Change bad letter
⊥	Push down space
9	Turn over
ℌ	Take out (*dele*)
∧	Left out; insert
※	Insert space
∨	Even spacing
⌣	Less space
⁀	Close up entirely
⊙	Period
,/	Comma
⊙	Colon
;/	Semicolon
✓	Apostrophe
✓	Quotation
=/	Hyphen
≠	Straighten lines
⊏	Move over
□	Em quad space
/—/	One em dash
/2—/	Two em dash
¶	Paragraph
No.¶	No paragraph
wf.	Wrong font
.....	Let it stand
stet.	Let it stand
tr.	Transpose
Caps	Capital letters
s. c.	Small caps
l. c.	Lower case or small letters
Ital.	Italics
Rom.	Roman

adventure and romance magazines are often referred to as pulps, from the low-grade wood pulp paper on which they are printed.



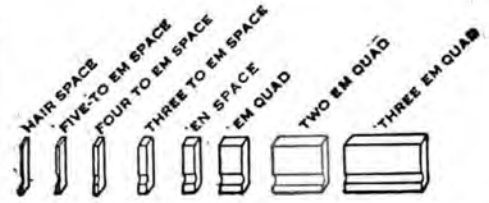
Multiple Punches

Punch—A device for punching round or slotted holes in paper or cards. Multiple punches punch two or more holes in a row at a time.

Put Up—To capitalize; **to put down** is to reset in lower case.

"Q"

Quads—Properly, but almost never, called quadrats, are pieces of metal less than type high, made in en (½ em), em, 2-em and 3-em lengths, in all points, to fill in between sentences, at the end of

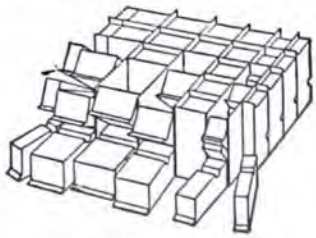


paragraphs, etc. Spaces are similar to quads, but are of smaller size.

Quadbox—The lower right hand compartment of the type case, reserved for 2 and 3 em quads.

Quad Rule—Quads made of type metal, with a rule face cast on the lower part of the body, horizontally, so that ruled printing may be produced without the bother and trouble of using regular rule both ways. When setting a job in quad rules, it is customary to use regular rule for the perpendicular lines, and quad rule for the horizontal lines. The accuracy of the quad rules assures the user of easily locking up the form, and not

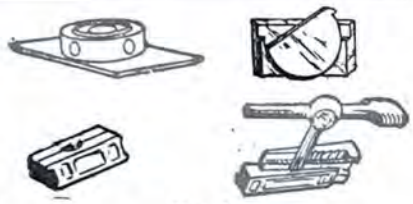
only eliminates the cutting of rule and spacing material into small pieces, but prevents the lines from being crooked or dropping out of the chase.



Quad Rule

Query—A mark on a proof, usually a question mark, calling attention to a possible mistake in the set-up, or suggesting improvement.

Quire—24 sheets of paper.



Quoins

Quoins—Small wedges used to hold the form in the chase. When the form is tightened with the quoins it is said to be locked up. Quoin keys are devices used for operating the quoins.

Quotation Furniture (Metal Quotations)—Metal furniture cast in type molds.

Quotation Marks — Usually known as "quotes" (“ ”) used to mark off matter taken from some other writer, to indicate conversation, etc. In most type, a pair of inverted commas (“) are used at the beginning, and two apostrophes (”) to mark the end of a quotation.

Quoted Matter—Matter placed between quotation marks.

"R"

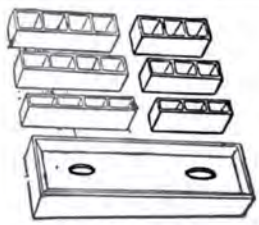
Type Case Rack

Rack—A frame for holding type cases, chases, galleys, etc. Type case racks are the most common.

Rag Content — Paper having more or less rag fibres in its make-up, varying from all rag papers such as the most expensive bonds, to papers with a very small percentage of rags. In these days of cheap wood pulp bonds, paper with any rag content at all is rather above the average.

Railroaded—Matter put on the press without checking for corrections has been railroaded.

Railroad Furniture—Metal furniture of I beam construction, made in large sizes only, for large fill-in work.



Metal Furniture

Rate Card—A card, folder or similar size sheet with advertising rates, circulation, and general information about the publication issuing it.

(To be continued)

LESSON SEVENTEEN

Cost and Selling Prices

What is the actual cost of a given job, and what is the proper selling price? These two questions will start an argument almost anywhere, anytime, and not only between printers. The trade papers are always harping on the subject, taking it apart, dissecting it, receiving letters from readers who think somebody else's published formula is full of holes.

Nobody can tell the printer what he should charge for a given job. You can get six different prices from six different printers for the same piece of work. Can only one be right, and all the rest wrong? Perhaps (but not necessarily) the lowest one is giving away his work, and the highest is asking too much. They may have cost figures to justify their prices.

Each of the printers may be planning on doing the job with slightly different equipment. The low man may not only be more efficient, but he may have a press which is better suited to turn out this particular job at a low price. His calculated profit may be just as liberal as some of the higher bidders.

For the printer with a small shop, particularly the one man variety, this cost and selling price situation adds up a little differently than for his bigger brother. If you are in this class, these remarks have more force for you than for someone with more equipment. In the first place, you will, even if small, want to keep a close record of your costs on each job, particularly of the time and materials entering into it. Overhead expense — heat, light, power, rent (or taxes if you are in your own building, home or otherwise) should be fairly prorated, but you can get that afterward. If you forget to keep the labor and material cost, it will be too late when you discover it. Wear and tear on equipment (depreciation) is also a legitimate charge. At last reports income tax men were figuring the average life of presses at 20 years, which would mean that 5% of the original cost should be charged against each year's business. Type they give 6 years, but it is obvious that this depends on how intensively it is used, also HOW it is used. If your experience is different, you should go by it. Steel galleys, which most printers would make last a lifetime, were rated at 5 years, binders and stitchers 10 years. On the average we'd say that you would be coming pretty close if you use 10% of your original cost as a charge against the year's business, except on type, leads and such material, which should be figured on your own experience.

Having kept such a close check on your costs, you will be in a position to know just how far you can go to meet the miscellaneous assortment of prices you find quoted in your vicinity. You will be able to tell what is the largest edition or quantity you can run on your equipment before you get to a point where the bigger printer with automatic machines can catch up with you. However, just because you do find that on long runs he can get below your prices, you may not be justified in thinking you ought to go out and get high-priced equipment, too. Many a poor printer does that very thing, and finds himself working for the press, instead of the press

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working for him. Then, to meet the payments, he goes out and makes some cut-throat prices on his own hook. Better let some of the business get away than mortgage yourself to a piece of machinery.

The biggest item in the average printing job is labor. The only ingredient which will not vary a great deal among different printers is the cost of the stock. The more expensive equipment you have, the greater will be the charge for overhead, including depreciation. On large work and long runs, the saving in labor possible with automatic equipment offsets this overhead, if enough of it is available to keep the machine busy. On smaller work and shorter runs, hand fed equipment will turn up lower costs, and if the press is idle part of the time, the small amount of money invested keeps the overhead down.

The really larger printer is not interested in smaller jobs, because he is not geared to handle them. The one man shop without expensive equipment can handle them and show a profit. The in-between-size printer is the one who has the hardest time, because he is offered lots of small jobs, and feels that he should take them — yet his costs indicate to him that if he adds a normal profit he may be considerably higher than smaller competitors. This may reflect unfavorably on his ability to get larger business, so he either gets his normal markup and takes a chance on kicks, or sells low and charges the difference to good will, if the customer is a valued one. However, his lowest price will still be high enough to provide you, if you have a one man shop, with a satisfactory profit.

Only shopping around will tell you what the prevailing scale is in your vicinity. Every big department store in every large city is doing that continuously — finding out what others are charging for similar merchandise. Apply this to your own business, and have some friend get several quotations on a similar job if you are in doubt as to the prices prevalent in your vicinity.

As time goes on you'll acquire more information and confidence in your ability to make prices which will be fair to all concerned.

Paste for Labels

You may find that ordinary pastes for putting on labels have a tendency to discolor the paper, or if you use flour paste, turn sour. The following formula is often used, with good results.

Dissolve an ounce and a half of gum arabic (which you can obtain at a drug store) in a quart of water, then mix in it a half pound of flour. Heat the mixture, and when hot, add ¾ ounce of sugar of lead, also ¾ ounce of alum. Before putting in the sugar of lead and the alum, dissolve these two in a little water. Stir well, bring to the boiling point, and then remove from the heat, adding 4 drops of carbolic acid to keep it fresh. *Not made to be licked.*

If you are printing labels for a customer, you can pass this information along to him, and it may be of much assistance.

What Should Be Allowed for Spoilage

When you run a printing job, there is always a certain percentage of sheets which are not printed straight, are smeared, or are otherwise unfit for use by the customer. In planning for your paper, you

will in many cases where an exact quantity is necessary, have to figure on this spoilage. The smaller the number of sheets or cards to be printed, the larger the percentage of spoilage must be figured in, and if the job is to be run in more than one color, almost an equal amount will have to be allowed for each additional one. In order to cover any possible spoilage, many printers figure slightly more than they anticipate, and charge for any additional perfect copies at a price proportionate to the rest of the job. Others run a little over or a little under the amount without making any change in price. Some customers are perfectly willing to pay for any overrun, others refuse. Most customers can understand when it is explained that it is practically impossible to print a given quantity down to the last sheet, but they disagree as to what should be done with the overrun or the shortage. It will therefore be a question of your own experience as to what course shall be pursued when you have either.

Below is a list showing the percentage which many printers allow for spoilage when planning on their paper or card requirements. The use of it may save you much trouble when practically exact quantities of perfect copies are needed. If your own experience runs consistently over or under these figures, you can change them to suit.

No single set of figures is suitable or acceptable to all printers.

Quantity	First Color	Each Additional Color
100 to 250	10%	5%
250 to 500	6%	4%
500 to 1,000	5%	2½%
1,000 to 5,000	4½%	2½%
5,000 to 10,000	3½%	2½%
10,000 to 25,000	2½%	2%

Less than 100, 10 sheets for the first color and 5 sheets for each additional color.

Use of the American Flag in Printing

There is some doubt in many printer's minds about the permissible and non-permissible use of the American flag, judging from letters we have received.

It is perfectly legal to use the flag on programs, in decorative borders, and in fact any place in printing *excepting only* trademarks and similar devices. If you were to make up a trademark for yourself, and eventually decide that you wanted to register it so that nobody else could use it, you would find that the patent office at Washington would refuse to allow you to protect it in any way. The same applies to the national coat of arms and any device using the Stars and Stripes on a shield, banner or in any other way, *in a trademark.* You are at liberty to use the flag, shield or banner in advertising or in any other way aside from that.

While on the subject it might be well to state that the red cross is protected in exactly the same way. One or two very old established firms like the firm of Johnson and Johnson, makers of surgical supplies, who had been using a red cross in their trademark for many years before the question was settled, were exempted from this law. No new firms can use it, however, as far as trademarks are concerned.

Pronunciation of Printing Terms

Printing terms are often mis-pronounced. Printers are divided, even on the word "Envelope"—those who pronounce it as it is spelled, those who pronounce it "onvelope," and

those who use either one or the other, thinking that both are correct.

EN-velope is right, and there is only one dictionary in this country which recognizes ON-velope even as second choice. While we are quite independent ourselves, and don't always go for dictionary pronunciations when we don't feel like it, we usually trail along if a word is pronounced correctly as it is spelled. This is one of those cases. We feel so strongly about following rational rules that for a while we even used the simplified form envelop—which, by the way, the dictionaries recognize—but the weight of tradition was too much for us, and we gave it up—except as we forget, and use it by inadvertence.

When dealing with customers it is well to be tactful, using whichever style they employ—if you find out first. That's a good rule in many other cases, but hard to follow if your habits are fixed.

Another much mis-pronounced word in the printing industry is ITALIC. Most printers bring it out as Eye-talic, but that is just as wrong as Eye-talian. (We once heard the president of a large radio concern pull that one over a nationwide hookup). The IT is correctly sounded just as in the word "it", although of course the syllable breaks before the T.

Once in a while we hear the word Platen pronounced with a long "a" as in plate, but usually it is not done among the printing fraternity. In this case logic is with the wrong way. By rights it should be spelled platten, and then there would be no misunderstanding. However, typewriters have platens, too, and the ramifications of the various other industries which use it, plus the natural reluctance of anybody to change, would make the move extremely difficult. We got nowhere with envelop, which is a recognized alternative, so we don't intend to stick our neck out on platen.

Nonpareil, the old and still much used term for six points, is pronounced, correctly, by most printers, nonpaRELL, but it has several other meanings, which bring it into common speech, and many people who are not printers mispronounce it nonpaREEL. Another case where logic is with the wrong way, as we find so often in English.

Here is another on which printers themselves often go astray, particularly the older ones. Reglet is reglet, and there is no other proper spelling for it. We often hear "riglet", or "riglits". Seldom does it get into print that way, but we did see an advertisement for a toy press in a juvenile publication recently, which mentioned "riglets". We can find no authority for such a spelling beyond the very doubtful one of putting in type a common mispronunciation.

The word "font" is spelled "fount" in England, and once in a great while seen that way in this country. The dictionaries list it, so there is nothing incorrect about that spelling, or accompanying pronunciation. Here again we find it more common among the older than the younger generation. Incidentally the derivation of this word is usually attributed to the close ties between the early printers and the church, but much more probable is the theory that it comes from the word "found" (to cast) and is therefore related to the word "foundry".

"Asterisk" is often rendered in speech as "asterix", and this bodily change of the word is not confined to printers. Probably it is usually due to carelessness of speech, rather than to any misunderstanding about spelling. Like all such twists, however, it creeps into letters we receive, and presumably has some currency otherwise. No can do.

Once in a while we run across someone who says pica as it were spelled peeka or picka, instead of good old pie-ka (correct) but only the unpredictable English language can be blamed for such uncertainties.

A vignetted halftone (one with fadeaway edges) sometimes gives people trouble, but the word, being from the French, is pronounced "vinyetted". As you can see, English sometimes borrows a rough approximation of the foreign pronunciation as well as the spelling—but not always!

We believe this covers all the important questionmarks in the printer's vocabulary, if we exclude tympan, which is elided or slurred into "tempin" by 99 out of a hundred printers, with the result that if anybody uses the dictionary way, "tim-pan" he is likely to be considered either green or prissy. However, we're not going to try to reform either the spelling or the pronunciation of that one, either.

If readers find any other words used in printing that puzzle them, we shall be glad to help. Pronunciation, not definitions, because the Printer's Dictionary and The Printer's Guide take care of meanings.

Use the Right Paper, and Make it Easier for Yourself

Hardly a day goes by that someone does not submit a job run on bond or other writing paper, with the request for us to tell why the impression is not just right. We don't refer to stationery, or other jobs for which such paper is intended, but to circulars and work with comparatively large forms, where no writing or typewriting surface will be required.

If you want to get a comparison of the quality of work on bond paper and on book, catalog on circular paper, with everything in favor of the bond, look at the printer's supply book, and note the difference between the press section and the colored order blank—or perforated stub, if you have used the blank itself. A degree of fineness in the inking is evident on the coated which is entirely absent on the bond. It takes a lot of impression and a lot of ink. Only the fact that it must be written on plus its easily identifiable color causes us to use bond paper for the blank. With smaller equipment, where impression and inking capacity are limited, the printer will also do well to avoid bond paper EXCEPT FOR THE PURPOSES FOR WHICH IT IS INTENDED. Bond paper for stationery, yes. For blanks which will be written on, yes. But not on circulars or other miscellaneous work unless the quality of the work is not a consideration. Bond paper has a hard surface, so that writing ink will not soak in and spread. Generally speaking, the softer the paper surface, the easier it is to print on, so for circulars, programs, etc., make your choice from news white, colored

advertising, medium white, eggshell, enameled, or one of the other grades of book or circular paper, depending on the quality of the job and the cuts, if any. Even if the proper grade costs a little more, you will save yourself paper spoilage which may more than cover the difference, to say nothing of time wasted which may run into hours if the job is a particularly knotty one.

How to Pull Sheets with Small Margins from the Type Form

Under ordinary circumstances, when you are feeding a job into your press, the gripper fingers may be brought into play somewhere, even if only one can be used, and that at the extreme edge of the sheet. When it is possible to use only one gripper because of the small margin, care should be taken to keep only enough ink on the plate to do the job, because the more ink there is on the plate and rollers, the stickier your type form will be, and the harder it will be for the single gripper to pull the sheet off the form.

If you can use a soft ink (like book ink) on the job, even tho that isn't the kind ordinarily required, you will find that it will reduce the pull considerably. Sometimes there will be no margin to speak of on the sides, but a small one on the edge of the sheet toward you. In that case you can set your grippers at each end of the chase, out of the way of the form, and then stretch a rubber band between them, at a point which will catch the top of the sheet as far down as it can without getting in the way of the form.

If there is not room enough for that, but there is a small opening in the form somewhere along the top, you can run a piece of metal or wood between the grippers (which are set same as for the elastic) and then run a small piece of wire at right angles to that, down onto the sheet. If the opening is on the bottom edge, the same arrangement may be made for that position. When the gripper hold is narrow it can also be strengthened by glueing a strip of sandpaper on the surface of the gripper which comes in contact with the paper. *(More in lesson 19 on this subject.)*

Lesson 17—Questions

1. *In figuring selling price on a printed job, what should be figured other than the cost of paper?*
2. *What are the restrictions, if any, on using the American Flag in printing?*
3. *What kind of paper is best to use when printing halftones?*
4. *What is bond paper usually used for?*
5. *Does bond paper or book paper take more impression to do quality printing?*

The Printer's DICTIONARY

"R"

(Continued)

Reader—May be a proof reader, but often used in referring to a reading notice advertisement; that is, an advertisement which appears in that part of a publication supposedly devoted to editorial matter, and generally written in such a way that at first glance it may not appear to be an advertisement at all. Many magazines and some newspapers will not publish readers, but most of the newspapers may be persuaded to run such copy

when it is accompanied by a sizable order for regular space. In that case they are not really readers, but "free" publicity run for a consideration. A notorious example of this last variety will be found in the automobile sections of newspapers, which are loaded with press agent material published free because of the regular space paid for. A genuine reading notice must, according to present government laws, be labelled "advertisement" or "adv."

Ream—Like long tons and short tons of coal, there is the mathematically correct ream of 480 sheets (20 quires) and the more generally used ream of 500 sheets. The use of the 500 sheet ream is in line with the present tendency to use units which are easily divisible in thousands, hundreds, tens, etc.

Reducer—A substance used for thinning ink which is too thick.

Reference—Letters, figures or characters used in the body of a page, and repeated at the bottom with the matter referred to. In addition to letters and figures, the following are often used as reference marks: *†‡§¶. These characters may be purchased in fonts of auxiliaries, or at the extra letter price, either by number or by the 6-inch line.

Register—Good register is the correct super-imposing of one color on the other in the printing, or the proper placing of each color on the sheet, so that the intended result is brought about. Poor feeding (placing of the sheets on the tympan) will cause poor register, or incorrect relocking up of the form after it has been gotten in register.

Reglet—Thin strip of wood, less than type high, and in various widths from six points to twelve points, for use in making up and locking type forms or forms with cuts in them. Reglet comes in yard lengths, and also in labor saving fonts of assorted sizes. In sizes larger than twelve points it is known as wood furniture.

Relief Printing—Printing from raised surfaces such as type and ordinary cuts, as contrasted with engraving (printing from recessed surface plates), gravure and other methods.

Retouching — Work done on a photograph to make it satisfactory for producing a cut therefrom. It very often consists of bringing out points which are not clear in the original, and otherwise "improving" the negative or print (whichever is being retouched). Engravers make an extra charge for such work, based on the time used, and the skill of the retoucher.

Reversed Plate — A plate on which the printed impression is the reverse of normal, such as a plate which prints a black background, leaving white letters.

Revise—A proof taken after the corrections noted on the first proof have been made.

Ripple Finish—A crackle or mottled finish on paper, made by running the damp stock thru steel rolls which have a surface similar to the ripples in water. This ripple may be very pronounced, or it may be a facsimile of the crackle surface acquired naturally without running thru rolls by high priced rag-stock paper which has been pole dried—that is, laid over poles in a loft to dry. Ripple finish is in much demand for stationery, and is sometimes used on cover stocks.

Roller Composition — The resilient material from which the rolling surface of ink rollers is made. The basis of most roller composition is glycerine and glue, with various other substances put into the composition by different manufacturers to improve its wearing qualities.

Roller Cores—The steel rods of the rollers on which the roller composition is cast.

Roller Moulds—Cylinders in which rollers are cast with roller composition. Most rollers are now cast in nests of "guns" consisting of numerous cylinders surrounded by a chamber thru which hot or cold water or steam can be run to either heat the moulds or chill them. The moulds are heated so that the composition will keep fluid and fill the moulds properly when pouring. They are then chilled so that the composition will solidify and make it possible to pull or draw the rollers out of the mould.

Roller Supporters — Same as bearers — pieces of metal which can be put in the chase at each end and offer an additional bearing surface for the rollers to prevent sliding.

Roman—The general style of most faces of type used for body work, such as books, magazines, newspapers, etc. The type in which this is set (Century Roman, or as is often known, Century Expanded) is a Roman face. So-called oldstyle faces are also of Roman abstraction. As explained previously under the definition of Oldstyle, the terms are so loosely used that it is easier to point out examples than to give hard and fast rules for identifying them. Any type name with the word Roman in it is obviously a Roman face, likewise any carrying the name Oldstyle, altho every authority would not agree on this latter point.

Rotogravure—Similar to gravure, but instead of a grained base, a very fine screen is used, which is almost imperceptible. The etching is done on a copper cylinder, from which the printing is done on sheets, or for newspapers and magazines from a web (roll) of paper, the paper being brought in contact with the cylinder by a rubber composition impression roller. Sunday picture supplements of the newspapers are examples of rotogravure. For such work rotogravure seems to be more popular than halftone work, because the screen (dots) are very little in evidence. It is, of course, inferior to regular gravure, but straight gravure because of cost and mechanical considerations cannot be used on long high speed work. See *"Gravure"*.

Rough Proof—As its name implies, it is a proof taken hurriedly, and without any attempt to improve impression.

Routing—Drilling out or otherwise removing blank portions of a cut or plate so that the paper and rollers will not come in contact with them and smudge or otherwise mark the sheet or card being printed.

Rubber Blanket—A rubber sheet usually backed up with fabric, to put on the platen and give more resiliency to the tympan when running very large forms, or when type is so badly worn that the ordinary hard packing does not yield good results.

Rule — Brass or other metal strips, type high, the face of which will print a line, double line, or some variation of a line. There are also fancy rules which may be used the same as type-cast borders.

Rule Work—Any kind of work involving the use of rule, particularly the setting up of ruled forms.

(To be continued)

LESSON EIGHTEEN

Inking

The thickness or consistency of the ink likewise has something to do with the ease with which you can do a good job. General job ink is a remarkably good all-purpose ink, but sometimes you will find it necessary to thin it ever so little. There are thinning varnishes and ink reducers listed in the catalog. In an emergency, vaseline, lard, or even kerosene (the merest drop) may be used for a thinner. Thinning job ink will be seldom necessary, except when running halftone cuts on coated or enameled paper, when the paper has a tendency to pick — that is, the stickiness of the ink causes the type to tear minute pieces of the paper surface away, leaving white spots on the printed impression, and gradually muddying up the ink with paper particles. Bond papers have a hard surface, so that they do not pick — in fact, unless a fairly stiff ink is used they will often refuse to take it. Bond ink is, therefore, made quite stiff, and more than one new customer has assumed that he has received old stock ink, not realizing that bond ink is made that way purposely. It may be thinned as described above when necessary, as may be the colored inks.

For general book work where you are going to print on soft surface paper like eggshell or antique, it is best to use the book ink. Although the other ink can be thinned, the characteristics of the various inks are not made the same by simply thinning. On coated stock, halftone black is best. Where ink does not dry readily, particularly on hard surfaced paper, there is an ink drier listed which will be of help. However, in that regard, you will find the use of as little ink as possible to get a good job the best assurance of drying. If too much ink is used, the pigment and the oil are likely to separate later, to say nothing of the difficulty in drying.

Much difficulty in distribution of ink, muddiness of impression, etc., in winter can be laid to the temperature of the room in which the press is being operated. Be sure that your printing room is at least 70 degrees for at least an hour before you start using the press, so that the rollers, ink, ink plate and all parts are thoroughly warmed up.

The amount of ink used on work has a great bearing on how fast printing will dry. Carry less ink on the ink plate, and ink more frequently, both for good results and quicker drying. The grade of paper also affects drying, or to be more exact, the kind of paper. Bond paper, having a hard surface, does not absorb much ink and dries slower than book paper or newspaper, which are more or less absorbent. Careful makeready will make less ink necessary, and in addition, a clearer, nicer job, will make quicker drying. It is, of course, necessary to carry a little heavier ink anyway on work with heavy bold faces of type or heavy cuts, than on finer type, such as ordinary six and eight, ten and twelve point faces, and it is likewise necessary to carry enough ink to take care of the heaviest part of the form you are running, so that unless care is taken when mixed work is being run, the ordinary lighter face type

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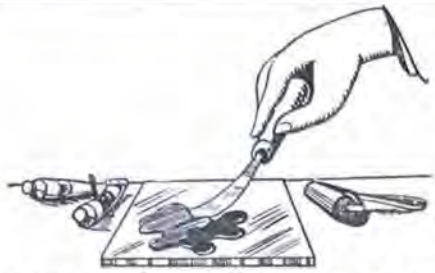
will appear overinked. Good make-ready and the proper amount of impression is, therefore, doubly advisable to make the necessary amount of ink as small as possible.

Mixing Colored Inks

A piece of marble will do for mixing ink, but on colors a slab of glass—plate glass or even window glass—will be better, because you



An ink knife or a piece of brass rule and a piece of marble or window glass are desirable, altho you can mix inks on the back of a steel galley.

can put a piece of white paper underneath it, and the tint you are mixing will stand out well. If you are going to use a colored sheet to print on, you can use a piece of that instead of the white, so that while mixing the ink, you can get an idea of how the tint will look when printed. You will find this method of matching colors a particularly satisfactory one.

If you are anxious to match another job, or are particular as to what color you are going to use, it is best to mix ink only in daylight, or, if that is not possible, get one of the blue, so-called daylight electric light bulbs, which will give you as near artificial daylight as can be made. They cost only a few cents more than the ordinary, and you will find them much more pleasing to work under in almost all kinds of work. Daylight Fluorescents are also good for mixing.

Four or five different colors of ink will enable you to mix almost any tint in the rainbow and out of it. You will want black, red, yellow, blue and mixing white. If you do much color work it will save time to have green, orange, brown and purple as well, but they are not necessary. In mixing, always use the lighter color as a base, that is, put a small quantity of the darker into the lighter, rather than the reverse, because a little dark will go a long way, and if you try to lighten up an already dark ink you will mix so much you will never be able to use it.

Lighter tints of the same color are always made by using the color itself in mixing white ink. Of course if you want a yellow green, which is really lighter than the original, you will use yellow, but that is really changing the tint, not merely lightening it. Green may be made by mixing blue and yellow, the tint depending upon the proportion of the two. Purple comes from red and blue. We believe, however, you will find it more economical to purchase ready made green and purple, and confine your mixing to the tints which cannot so easily be obtained.

Care should be taken to determine which colors will go best together, if you are going to print in two or more. Save all samples of colored work which come your way, in addition to those you print yourself. You can from them often select a color combination which will be very pleasing without loss of time thru experimenting.

Muddy Impressions — How to Eliminate Them

Probably the leading cause of muddy impressions, particularly among new printers is the use of too much ink. The beginner will not realize that a very small bit of ink will go a remarkably long way, and the printer who is not a beginner, but who has not had long experience — and many who think they have had it—will load on ink, when what is required is better impression, better rollers, better distribution, a little more heat in the room, or any one of several other things — anything but more ink. Another point—if too much ink is put on, it may look passable at first, but gradually the oil will separate from the pigment, and make a tiny ring around each letter on the paper.

There is another result which comes as a retribution to the printer who has been careless about cleaning his type before putting it back in the case. The old ink of previous jobs has hardened on, and the new ink has no chance to get at the smooth surface of the type and in turn make a smooth impression on the paper. Such a form of type needs a real old fashion cleaning with lye or something equally strong. A really good job will not be possible until all the type which has been thrown in the case dirty has been properly cleaned, because each dirty letter will stick up above its brothers and be conspicuously muddy. Type should be first wiped with a cloth saturated with a cleaner, then it may be brushed, and after that a final wipe-up should be administered with the cloth. The cleaner your type, the longer it will last and give satisfactory service.

Too low a temperature in the room in which you are working will cause muddy impressions, because ink can only work at its best when it is used in a temperature of 70 degrees or over. The press, the rollers and the ink should all have been in such a temperature at least an hour before using the press, so that the metal as well as the ink and roller composition have had time to become warmed. The fine results often experienced toward the latter part of a job are usually due to better temperature conditions, as well as more thoro working in of the ink—which, by the way is important if it is to behave properly. The handiest way to work up the ink is to use a hand

roller, but one of the press rollers can be used if the hand roller (brayer) is not available. When you put ink on the plate, smooth it out perfectly before running the rollers over the plate and then the type form. Otherwise the undistributed ink will get onto the type and make a muddy impression. The ink should be so smoothly worked out on the plate that no signs of the new ink just put on

are visible anywhere on its surface.

Old, hard rollers will give a muddy appearance to jobs, as will any kind of sliding instead of rolling on their part. Roller supporters will often help under particularly difficult conditions. They may be made by locking furniture into the ends of the chase, type high, or you can purchase those made of metal, which take very little room in the chase, yet offer a bigger bearing surface than the wood variety, since they are made to hang over the outside edge of the chase, being in L shape. If the sheet of paper you are printing is so big that the supporters get in the way and mark them, a frisket can be used.

Perhaps your ink is a little thick, in which case a muddy impression will result. A drop of ink reducer, reducing varnish or even kerosene will often help. Some printers use vaseline. Look out for the quantity. A very small drop indeed will usually be plenty. Then, perhaps your ink had become dried and there is a lot of skin in it. Keep the ink tube or can tightly closed at all times, and you will avoid trouble with ink. Different inks have different characteristics, as have various colors, but they will all respond to care in handling and keeping airtight.

Taking Proofs in Two or More Colors

There are several ways of getting two or more colors on a proof which if used will quite often bring you a two color order where otherwise only a single color job, with less profit, would be received.

Assuming that you have the job set up, and either tied up with string, secure in a galley, or locked in a chase, you are now ready to see what the job looks like. If you have two or three slabs of glass or marble—small pieces—handy, you will find them very handy to use for mixing ink on, and in this case you can use one for each color you want to try. If you have a hand roller, you will spread the ink with that—if not, you can use one of the press rollers.

Printing a single form in two colors with a frisket.

Having decided which parts you are going to try in each color, you can now cut a piece of paper in such a shape that it will go over the form and expose only those parts which you wish to print in black, for instance. You can then take your roller and run it over the form, inking only those parts which you wish. Next cut another piece of paper so as to only expose that part of the form which is to show in another color (red, perhaps), and ink that part of the form. This process may be repeated for as many colors as wanted, and if you wish to try several different color combinations, you can do so in this way without inking up the press.

The form is now ready for a proof in the regular manner. Just a word or so about proof-taking may be of help. Here a mallet and planer (block of smooth surfaced wood) come in handy. The form should be on an absolutely smooth surface. If it is in the chase, and you are using the Excelsior press you can take out the chase back

and use that. A marble imposing surface is good, or a metal one if it is really flat and smooth.

The better the ink is put on, the better the proof. Lay a piece of cheap white or other paper on the form, first dampening it just enough so that it is limp. Do not use a sheet which drips water—it will make the ink run. A dry proof is possible but not satisfactory, usually, unless you own a proof press. If you have an Excelsior your own press makes a good one for taking a proof, but we are assuming that for various reasons you do not want to bother to bring up the impression just to take the proof. Over the sheet of paper lay a heavy piece of felt, cloth, or something of even thickness which will act as a cushion. Put your planer or smooth block of wood gently down on the form, being careful not to move the paper, because that will blur the proof. Tap the planer with the mallet, and if the planer is not big enough to cover the form, move it (without disturbing the paper), and tap all parts of the form, so that the paper will be pressed onto the type all over the job. Remove the felt pad and then the sheet very carefully, so as to prevent any chance of blurring.

Some printers get rid of the necessity for a felt pad by covering the planer block with a number of thicknesses of old sheeting, taking great pains to get the bottom smooth; tacking the cloth on at the top. Felt or flannel may be used for this, also, with the sheeting on top outside.

Another method of inking for two or more color proofs takes advantage of the long known fact that the palm and fingers of your hand are an ideal "roller surface." A minute quantity of ink is put on a piece of smooth cardboard, or on the corner of the ink plate, and worked up with a couple of fingers, which are then used to ink the type. By using the fingers you can put the different colors just where you want them.

In the first part of this article we spoke of taking two or three color proofs on one color jobs. Sometimes, if you do this, you can submit it to your customer, and when he finds out what this greatly improved appearance will cost, he will change the order to a color job, with consequent more work—and more pay.

To Open Binding Ink Containers

This method is more strictly applicable to tubes, but a variation of it can be used for ink cans.

If the cap on the ink tube refuses to budge, heat the cap with a lighted match. This will soften the ink around the cap, and make opening easy in a great many instances. The cover of an ink can, while being much bigger, may often be persuaded to start in the same way.

Colored Inks Sometimes Mottle

Most materials made in colors do not materially differ one from the other, because the coloring matter in them is but a small part of their actual bulk. Not so with ink, however. When you use ink, you utilize practically the basic ingredients, with the addition of the oil, varnish, or whatever the vehicle or solvent may be.

As many of our readers have found to their surprise when they first bought colored inks, a pound

of one color may bulk up a lot more than another. Blue is very bulky—white the opposite.

This difference in the basic ingredient of various colors makes them behave differently in the printing. Some colors have a tendency to mottle a little on some grades of paper. Gloss varnish will sometimes help. On particularly fine jobs on some grades of paper, and with some colors, printers will print the same color over twice so as to get the result they want.

However, for average work, colors can usually be depended upon to do a good job without much fussing. The different behavior of different colors is not a sign of varying quality, but an indication of the many sources from which our colors come. While nowadays we may not get our blue from a plant and our red from insects, the modern sources are often almost as diverse in many instances.

The Varying Weights of Inks

Different colors of inks vary greatly in their bulk per pound. This often mystifies the purchaser, who gets a quarter pound tube or pound can of blue ink "chock-full," and perhaps at the same time orders some brown or white ink, receiving a tube or can which looks like short measure.

The pigment, or color, in inks is not at all alike in the different colors, so that, just as lead is much heavier than aluminum, a pound of blue, when put beside a pound of white looks much greater—and is, as far as bulk is concerned. It is impractical to carry too many sizes of tubes or cans on hand, so the same one is used for several varieties. Of course the heavy colors could be diluted so as to appear just as large as the featherweight ones, but that would be doing our customers a dis-service, and we prefer to write a letter now and then, explaining the situation, instead of sending out bulk for bulk's sake, without quality.

To Prevent Ink from Drying in the Can

Ink has an annoying habit of skinning over after the can is once opened, even if the cover is kept on very tightly. Some printers pour water over the top, which prevents air from reaching the ink (air causes the drying). Others recommend a coating of vaseline, and some people use cylinder or machine oil. The oil is inclined to mix a little with the ink, and is therefore the least desirable of the three. Water is probably the best all around covering, although in spite of that, the ink will dry or skin a little. Many printers find that on job work it is best to buy inks in quarter-pound tubes—even to buy four instead of one pound can—because on the whole there is less waste in inks bought in tubes, even considering the premium paid for buying in small containers.

Lesson 18—Questions

1. *What temperature is recommended for best results in printing?*
2. *How can you help to prevent ink from skinning over and drying in the can?*
3. *If you have red, yellow and blue ink, how would you mix a.) green, b.) purple, c.) orange?*
4. *What is a signature in reference to a book?*
5. *Should you use bond ink to print a halftone on enameled paper?*

The Printer's DICTIONARY

"R"

(Continued)

Ruling—Light colored lines on billheads, statements, ledger paper, forms, etc., put on with a special machine equipped with pens. The printer can often produce a satisfactory substitute either with ordinary rule or a special cut made from a pen and ink drawing, but on stock billheads and statements the ruling machinery variety is usually cheaper.

Run In—To reset matter which has been set in display type in the same kind as the body matter, or to eliminate a paragraph (set the same matter so as to run in with the previous paragraph).

Run Over—To carry over words from one line to the next, spacing them out and running the matter along, until it is absorbed, either by closer spacing, or the intervening of a paragraph.

"S"

Safety Paper—Paper treated and watermarked in various ways to make alteration easily detected. Used mostly for bank checks.

S. and S. C.—Abbreviation for "sized and supercalendered" paper. S. and S. C. is better than S. and C. (Sized and calendered) or M. F. (Machine Finished) but not as good as enamelled or coated paper.

Scoring—The use of cutting or scoring rule to produce a mark or depression in paper or card so that it will fold or bend without breaking or wrinkling. Some printers also employ the term when referring to creasing rule.

Script Type—Type whose face is made in imitation of writing. Used

Script Type for Wedding

mostly for formal announcements.

Secondary Color—A color made by mixing two of the primary colors (red, yellow, blue) in any proportion.

Series—One style of type in its various sizes. A type family consists of several series having characteristics in common. See definition of family.

Serif—Small projections at the ends and corners of letters. Sans-serif and the so-called Gothic types (except the plate Gothics) have no serifs. Most other styles do. (This STYLE has serifs. **This has none.**)

Set—The making up of lines of type for printing; the width of type (left to right or right to left dimensions).

Set Close—To set with thin spaces.

Set Solid—Set without leads or other spacing between the lines. (Solid matter)

Shade—Technically speaking, a shade is made by adding black to a color. Probably many printers use the word indiscriminately, when making lighter tints, darker shades, or mixing two colors together if it doesn't materially alter the original colors.

Shank—The body of the type on which the face or character is set.

Shooting Stick—An instrument for tightening up quoins. Very rarely used nowadays, when metal quoins are the rule, and wooden quoins more or less a thing of the past.

Short And—The character (&), otherwise called an ampersand.

Short Run—A job of few impressions as contrasted with a long

run—one running into a large amount.

Shoulder—The top of the body of type, between the face and the sides.

Side Heads—Words in caps or heavier face than the body, at the side or indented in a paragraph. This ABC is set with sideheads.

Signature—Each section of a book which is printed on a single sheet is called a signature. The number of signatures depends on the size of the pages, the size of the sheets and the number of pages. The word also covers the generally accepted ordinary meaning, including the name of the firm at the bottom of an advertisement or announcement.

Parts of printing type

Signature Mark — Small figure or letter in margin of each signature (part) of a book, which helps the binder to assemble the part in their right order.

Sizing—The use of size to make paper less porous or absorbent than it would otherwise be, and to give it the proper surface. News stock and blotting stock is devoid of sizing. Writing and bond papers have sizing which make possible the use of writing inks upon them, other papers more or less sizing depending upon the printing surface desired. Sizing may be applied in the early stages of the soft pulp, or put on after the paper is actually manufactured.

Slip Sheeting — When a job is being printed, the sheets sometimes have a tendency to transfer ink from one to the other—offset. This is sometimes overcome by interleaving with plain sheets as the printed ones come off the press, and is called slip sheeting.

Slitting—Cutting slits in paper with steel cutting rule. On cylinder presses wheels are used for slitting or cutting.

Slug — When a lead is thicker than two points it is called a slug. As odd sizes are not very often used, for all practical purposes a six point slug is the smallest commonly so called.

Slur — An impression which is blurred is a slur.

Small Caps—Capital letters somewhat smaller than regular capitals, and cast on the same size body, so that they may be used in combination with the large caps. They are available in most body type faces, but are not so much used as they used to be. The abbreviation for them is s.c.

Small Pica—The old name for 11 point type.

Social Announcements—Stationery, including cards, envelopes, sheets, suitable for wedding invitations, and similar work.

Solid Matter—Type set without leads between the lines.

Solids—Parts of cuts or other matter which print full color, without shading. The colorless parts are called highlights.

Sorts — The printer's and type founder's term for extra letters or characters. When you run short of some letters and buy more to fill in, you purchase sorts.

Space-Mark—This sign ( ) when used in correcting proof indicates that space, or more space, is called for between words or letters.

(To be continued)

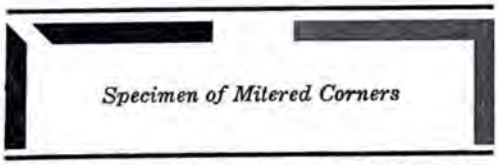
LESSON NINETEEN

Mitering or Beveling Rule

A ruled box, or rectangle enclosed by rules, is quite a neat piece of work to do, and if done well, requires some time. Perhaps you have tried mitering or beveling the rule for such a box, and therefore know at first hand.

Where appearance is not too much of a consideration some printers simply cut their rule square off to the required lengths, and butt the end of one against the side of the other. In its most careless manifestation, and where care is not taken to lock up the form so that the rule stays where it belongs, this method looks rather poor. An improvement can be made if the locking up or tightening of the chase is done so that the rule doesn't poke out of joint. Whether this is possible often depends on whether, when things are tightened, the leads, type, etc., inside the rule are spaced so that the contents of the rectangle or box are neither too large nor too small for the rule. If you have trouble, check up very carefully on this. Strips of cardboard, brass or copper thin spaces will sometimes balance it up so that it will lock properly. If, because the ends of the rule are not quite smooth, a little white shows, a small piece of tin foil or lead foil inserted between the two points and a retightening of the chase after this, will often help the appearance.

The more careful printer, however, will want to bevel, chamfer or miter the abutting corners of his rule (three terms for doing the same thing, in this case.) Each piece will be mitered off at an angle of 45 degrees, and that is quite a trick if it is to be done right. Moreover, enough rule must be allowed, when cutting, to provide for that cut away in the bevel.



Specimen of Mitered Corners

There are many expensive machines on the market for doing mitering a little quicker and a little easier than straight hand work. Those of you who have tinkered around in a home workshop will probably go at it in your own way. A common file may be used, but something similar to a carpenter's miter box should be used to get the bevel exactly 45 degrees.

The instructions for fitting the ends together properly which were mentioned at the beginning of this article also apply to mitered rule. If you take care, you will get good results.

How to Get Good Results on Rule Joints

It must be assumed in the first place that the mitered (beveled) corners of your rule are a perfect 45 degree angle, because unless the angle is perfect, it will never be possible to join the two without a faint white space showing somewhere. The length of the rule must be exact, also, because otherwise, when you tighten up your form, the rule will either spread apart, or it will bind at the corners and shove itself out, either at the corner itself or by bowing in the middle.

Two other characteristics of brass rule must be taken into consideration when using it, particularly as a box around a form of type. One is, brass rule, being harder than type, does not wear as fast, and when used with type more or less old and worn, will be higher than the type. The type form will therefore require a paper underlay to raise it to the same height as the rule. The second, is

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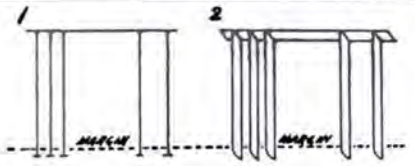
joints of brass rule have a tendency to wear more than the rest, consequently it will quite possibly be necessary, when using old rule, to underlay the corners with paper to bring them up to the height of the rest of the rule.

Be sure that the reglet or furniture used in the form is not so long that when you tighten up your form, the ends bind, and prevent the rule from coming together at the corners. If you have metal furniture or quotations, you will find it best to use them against the brass rule, rather than the wood reglet or furniture. Some printers put a piece of thick tin foil between the joints in brass rule before tightening the form, when, after taking a proof they find a white space between the joints. The foil is of course, after the form is tightened, carefully trimmed down to type height. Generally speaking, the points given above, if closely followed, will produce a good job, even with rule which has seen considerable use.

Protecting Rollers from Rule

Rollers can be protected from the cutting effect of rule if a small piece of rule—say a pica long—is placed across the end of each rule in the form, first filing off the piece so that it is about 1/32 inch lower than type high. One longer rule may be used for this if there are two or more rules in the form not more than 3 picas apart. If they are further apart than that the low protecting rule has a tendency to touch the paper. The low rule acts as a bumper, and prevents the sharp edges of the rule in your form from cutting your rollers.



TWO WAYS OF PROTECTING ROLLERS FROM BUTT ENDS OF RULE-

1- SHORT PIECES ACROSS BUTT ENDS.
2-ENDS BEVELLED OR ROUNDED OFF BEYOND MARGIN-

Another way of protecting the rollers is to wind a piece of adhesive tape around the part of the roller which comes up against the rule. The ink should be cleaned off that part of the rollers first, so that the tape will stick.

Lining Type When Used With Rule

Plenty of jobs, including application blanks, order blanks and the like, require the use of type followed by dotted or solid ruled lines. For proper appearance the bottom of the rule should be lined up with the bottom of the type,

Date.....
Wrong alignment of rule with type

Name.....
Correct alignment of rule with type

and this result can be attained by the use of rule alone or in combination with leads and slugs. To make the point more clear we show examples of both the right and the wrong way of rule alignment.

Century Roman and all other medium weight faces of type will look best if hairline rule is used. Heavier or blacker faces of type require heavier rule.

The proper use of rule on such forms will often correct that elusive appearance of something being just a little bit wrong without the cause being apparent at first glance.

Steel Cutting Rule

While a printing press is made primarily for using printer's ink and for printing, there are one or two other ways in which it can be

helpful in the completion of a job before it goes to the hands of the customer, and in some cases on work which requires no printing at all. These additional functions usually pertain to cutting, creasing, perforating, embossing and the like.

Perforating is fairly familiar to most students. Rule for perforating has a slightly higher face than type, and comes both in brass and steel. While it is possible to put the perforating rule in the chase with the type, and run them both together, the rule cuts rollers, and unless you have an old hard pair that you aren't very particular about, or are going to get them recast right afterward, it is just as well to do your perforating as a separate operation; that is, after the regular printing. Take the rollers off the press, put the perforating rule in the chase alone, in the proper location and feed the work thru the press.

Creasing rule, being more or less rounded in the face, can be run with type, although not necessarily. This rule provides a score or crease along which the paper or card will fold readily. It is often used in conjunction with cutting rule. The printer who wants to make a small paper cardboard box can so arrange cutting and creasing rule in his press that the stock may be fed into the press, and when it comes out it will be practically ready to fold and paste into a box.

In addition to the ability to use the rule straight, such as on boxes or similar work, the rule may also be bent into shapes so as to die out almost anything you wish. This sometimes involves heating the rule enough to take the spring out of it, but that depends on how sharp the bends are to be. All sorts of odd shapes for printed novelties may be cut out with the rule.

An Easily Made Composing Rule

Lines of type should be properly spaced out, and if you are setting lines in your composing stick without leads between them, accurate spacing is very often not obtained unless there is something between the previous line and the line you are setting, because one or two pieces of type in the finished line may be sticking out just enough to catch on the new line—making the new line appear tight, when it really is binding on the previous one. A lead may be used between the lines to prevent this, but it is not so easy to remove when the line is finished. A piece of brass

rule the right length is better, and it can be made into real "composing rule" by using a piece somewhat longer than the line you are setting, and then filing the ends so that it will fit the stick, with ears jutting out at the end over the stick for easy removal. As you set lines of different length at different times, you can make up your brass composing rules, and soon you will have a set which will do for practically all the common widths. You will find the use of a composing rule a great help in easily and quickly spacing out your lines.

To Prevent Cutting Rule from Bending

When using cutting rule, it is well to re-enforce it on each side with metal furniture high enough to protect all except the last pica of the rule. Five pica metal furniture laid out on end will do this. This will prevent the heavy pressure used from bending the rule.

Cutting Heavy Rule

Lead and rule cutters are made to handle brass rule up to six points in thickness, and it is just as well not to use them for cutting type or composition rule any thicker. To cut heavier rule is to strain the cutter and perhaps make it impossible to cut the smaller sizes accurately.

Larger shops use metal saws, and if you have access to one, or can rig one up, you'll find it a great convenience, as well as a producer of better work. Remember that in cutting you must allow a little extra for the part which will be turned to sawdust, which will be the width of the saw, plus whatever "set" or bend there may be to the teeth which cut their path through the metal.

Any kind of metal saw will do, but small teeth are preferable. If you are going out to find one, here are a few more suggestions:

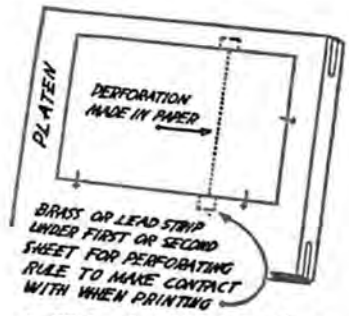
> The teeth should have a slight set, and be about 1/16 of an inch thick. The saw will work best if it is reinforced on each side by a thicker disc to prevent it from bending. Teeth that are slightly thicker at the cutting edge also give the equivalent of the ordinary set, and work well. A hollow ground saw is preferable.

For a really good job, rub the cut ends over with a fine file after sawing.

When You Have Perforating to do

The best grade of perforating is, of course, done with a perforating machine. Such a perforator makes the same kind of holes as are used to separate postage stamps.

The other kind of perforating is done with brass or steel perforating rule, both of which are listed in the catalog. It may be done in the same operation as the printing, or it may be put on the press and run through without ink or rollers. Running both at once saves time, running each separately saves rollers. Perforating rule, in order to properly cut, has a surface slightly more than type high. This means that if the type matter is run at the same time, the rollers will either cut a little, or they will not ink the surface of the type as they ought. Experienced printers carry a pair of old rollers on hand for brass rule jobs in general, and perforating jobs in particular. For instance, in running our order blanks with perforations down the side, we do the job in one operation to save time, but we always use old rollers for it.



A Help in Perforating

Some printers, when their form is small enough, or the press big enough, run the job "two up," with all but the perforating rule at one end of the chase, and the rule at the other end. The job is then worked once, turned around, and worked the other way, so that two

impressions make two complete jobs. They are then cut in two. They print the job in that way because they can use lighter impression on the rule end, and thus save their rollers. When running either that way, or putting the perforating on the press as a separate operation, a thin piece of sheet lead, such as is used to wrap high grade smoking tobacco, or tea, may be put on the tympan opposite the rule, and this will make a nice clean cut perforation on your job.

Printing Ruled Forms Which Come to the Edge of the Paper

The large use of typewriters and billing machines nowadays cause a great deal of billing work to be done on which the only lines, outside of those at the top of the billhead are perpendicular ones. These are usually printed instead of machine ruled, and are done at the same time the rest of the billhead is printed. While the lines are perpendicular, you will probably find it best to feed the job into the press sideways, making the majority of the ruled lines run horizontally, or in other words, just the opposite way from your grippers. This would be all right if the ruled lines were not usually to be run to the very edge of the sheet, leaving no room for the gripper to hold the paper on that end.

Gripper fingers shown left and right are Auxiliary Horizontal Gripper Fingers, made to hold the paper by reaching in between lines *where type form is too big to allow using press grippers, except outside of form.*

You can take care of such a contingency by getting a piece of very stiff pressboard, or any extra stiff cardboard, slotting it so that it will fit over the gripper, and making it wide enough to reach from the gripper (which is put over, out of the way of the paper and rule), onto the paper. Cut the pressboard so that the part over the paper will consist of fingers which avoid the rule, and fit in between. Thus when you make an impression, the cardboard will hold the sheet being printed firmly, but will not prevent the rule from printing.

There are many ways of providing proper gripping accommodations when the regular grippers, if used in the regular manner, are in the way, and the above will be found to be a very helpful sample.

Halftone Pictures With Vignetted (Fadeout) Edges

Probably the most difficult job you will ever have to get really good work is on halftone illustrations with what are known as vignetted edges. The vignette, or fadeaway background, is extremely hard to print without quite a little preparation, and should not be attempted unless the customer is willing to pay for the extra work. Only fine coated paper should be used. Some people get away with it on more ordinary stock, but you will want to have everything you can in your favor.

The halftone should be blocked a trifle lower than type high, so that the rollers will touch the edges of your plate very lightly, otherwise instead of the edge fading away, you will have a heavy black borderline around the background. This will also allow you to build up your impression in the middle of the plate. Overlays, which are described in Lesson Five, should be used to bring up the center part, and get good impression all over. An overlay between the plate and the block on which it is mounted will also help.

If you are successful, the result will be very pleasing. Remember that halftones take a great deal of

ink, but it will have to be put on frequently, in small quantities, rather than a lot at a time, if you want good results.

Dirt On Halftones

Any lint, dirt, dust or other foreign material is to be avoided when printing halftones. Type printing likewise calls for clean rollers and ink plate, but what will pass on ordinary work will give a peck of trouble on a nice halftone picture. Cleaning rags may harbor lint, ink may acquire a skin from exposure to the air, the ink plate may not have been covered up while the press was not in use, or not carefully wiped off, and all the little specks from any of these causes may mix in the ink. Type printing may not show them up, but let a halftone be put on the press and they transfer themselves in ever increasing numbers to the surface of the cut, where they themselves print in black, surrounded by white or gray halos.

Another source of troublesome lint is the paper or card stock, which may have fuzz on its edges from the paper cutter. A careful wiping of the edges of the block of paper or cards before starting to print will get rid of a lot of this. Some printers claim to have had so much trouble with card stock (not ours, by the way) that they have had to fasten a wad of cotton beside the press, and draw the top edge of the cardboard over it, to prevent the fuzz from that side falling down over the card and getting in front of the cut.

As for the ordinary kinds of lint and dirt first mentioned, the only thing to do is to clean up the inkplate, form and rollers with a lint-free rag, and put fresh, clean ink on the press. On troublesome jobs it may be necessary to do this several times during the printing. The cut itself should have particularly careful attention, because unless the surface is absolutely clean the impression will be poor and spotty. Complete evaporation of the cleaner should be assured before ink is again put on the press, because otherwise the color will be poor, muddy or blotchy.

Commas Before or After Quotation Marks?

This is a question which seems to bother a great many people. Putting the period, comma or any other kind of point after the quotation marks makes an awkward looking spot, and while it may be grammatically correct, it is not good practice from a typographical standpoint. If you are doing work for a person whom you know to be fussy, you can find out which he likes. Otherwise, better hide your commas, periods, etc., inside the quote.

Lesson 19—Questions

1. *How can you protect your rollers from being cut by rule?*
2. *What is the difference between cutting and creasing rule?*
3. *Should you use perforating rule in your printing form or should you make a separate operation of it?*
4. *What is the reason for using a composing rule?*
5. *How can you get good results on rule joints?*

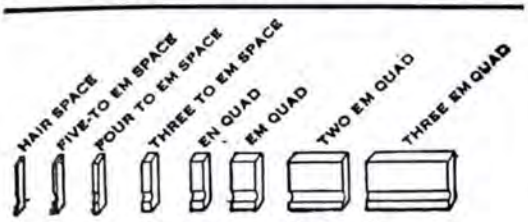
The Printer's DICTIONARY

"S"

(Continued)

Spaces—Pieces of metal less than type high, to fill in between words. When a space grows up (becomes the width of an "en" or more) it

is called a quad. An en quad is just half an em quad, which is a square quad. Spaces are designated by the number which together make an "em." Thus, when it takes three to make an em, or square, they are called 3-em spaces, or, more properly, 3-to-em spaces. A 5-em space is therefore smaller than a 4 or 3-em space, but quads work the other way, the 2 or 3-em quad being bigger than the em quad. In other words, everything begins at the em quad, and works both ways, backward and forward.



Spaces and quads

Spacing — Putting the proper amount of spacing material around and between all parts of the words, sentences, lines, paragraphs, groups of type, and all parts of the form, so that when it is tightened or locked up, everything will be in its proper place, and the form may be picked up without chance of anything dropping out.

Spotsheet—Making ready (overlay) on the tympan requires pasting pieces of paper on a sheet so as to bring up the parts which don't print well, and such a sheet is called a make-ready sheet or spotsheet. The actual operation is called patching up or spotting up.

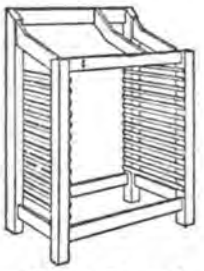
Spotting Up—Marking out and pasting patches on the makeready sheet so as to bring out the low spots in the printed press proof.

Spread—Two facing pages. When advertisers use two such pages with a layout which covers both of them as one, it is a double page spread.

Spring—If the form in the chase is not absolutely flat, due to worn furniture, poor spacing, etc., it springs, and if put in the press, the constant putting on and taking off of pressure in printing may cause some parts to work up and get loose.

Spring Tongue Gauge Pin

Spring Tongue Gauge Pins—Pins for holding work on the platen in the proper place when the printed impression is being taken, with adjustable tongues or projections which bend easily and therefore do not readily break from pressure of the platen against the form.

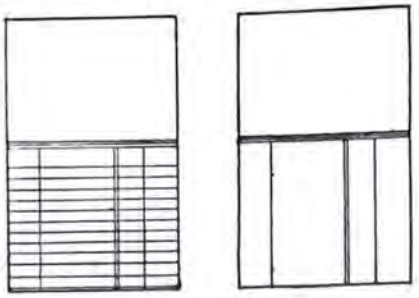


Case Stand

Stand—The rack used for holding type cases and all other cases.

Standing Matter — Where newspapers, magazines and other periodicals are printed, standing matter is material all set up which is kept and used from one issue to the next.

Staplers—Binders using individual staples for binding tickets, circulars, catalogs, etc.



Statements

Statements—Usually ruled sheets of paper about 5½x8½ inches in size, on which the printer runs his customer's name and address, with any other desired information, at the top. The purchaser uses them to send out statements of account to his customers on the first of the month.

Stapler

Steelplate Engraving — Plates made by engraving on steel, used for high grade engraving on jobs which would wear out ordinary copper plates. Neither copper plates nor steel plates are used on ordinary printing presses—the process is just the opposite, the part to be printed being engraved in the plate rather than standing out on it in relief. American paper money and postage stamps are examples of printing from steel plates.

Stereotypes—Plates made of type metal, obtained by pouring molten metal over a type form or other similar material. Before the common use of electrotypes, stereotypes were much used, but electros wear so much better and make so much better plates that they have largely superseded them except for newspapers, where there isn't much time to get electrotypes.

Stet—A proofreading term, meaning to let it stand "as is."

Composing Sticks

Stick—The common term for a composing stick, in which lines of type are set and justified before putting into the form.

Stickful—Printers and newspaper people frequently use the term "a stickful" to denote a paragraph or so, or approximately the capacity of a composing stick (about two inches).

Stippling — Graduation of light and shade in a picture, produced by dots of various sizes, more or less closely set together. Paper or card stock which has a so-called pebbled surface is also called stippled. Many picture post cards are printed on pebbled or stippled stock.

Stitching—Sewing or stapling of magazines, books, etc., together.

Stock — Any kind of paper or cardboard used for printing.

Stone—Any kind of surface for imposing, whether of metal, or of stone. The surface on which forms are locked up in the chase. It has an absolutely smooth surface, so that the form will plane and lock up level.

(To be continued)

Invitation

Mr. and Mrs. Peter Owens McCullen
request the pleasure of your company
at the marriage of their daughter
Carol Ann
to
Mr. William Bentley Woodruff
Friday, the twentieth of November
One thousand nine hundred and fifty-nine
at two o'clock
St. Paul's Church
Hartford, Connecticut

R.S.V.P.

Type used in this specimen is Typo Roman

LESSON TWENTY

Setting Wedding and Other Announcements

Of all printing styles, wedding invitations and such announcements seem to change the least over the years. There are variations in the size of the stock used, but the differences are not material. Custom seems to decree that, except in war years, when

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paper is scarce, there should be a folded sheet, an inside and an outside envelope, and usually a piece of tissue, ostensibly to prevent smearing or offsetting of the printed surface.

Of late years there has been a trend toward larger envelopes and smaller sheets, which makes possible a single fold, with none in the printed page itself. However, styles being what they are, a reversion may set in, so consult the wishes of the customer on this as well as on all other points. You can only suggest and advise; the purchaser decides. The information in this lesson can, therefore, only be considered as reference material to be stored away in your mind or with the rest of the lessons for later use.

Sample invitations are shown. All invitations and anouncements are, of course, written in the third person. The English style of spelling words like honor and favor (with a u, "honour, favour") is the accepted rule. The first page of the sheet is used for printing. The invitations are made out in the name of the bride's parents if both are living. If only one is living, the surviving parent's name is used; if they are divorced, the one with whom the bride-to-be resides. If both are dead, the nearest relative issues the invitation or announcement.

We illustrate here the Invitation form, the one for an Announcement, and the Reception and At Home cards. The Reception card is included with the Invitations to those so invited, and the At Home card being used in the same way: no names need appear on either. The couple's married name may appear on the At Home card if desired, followed by "will be at home —," the rest as appearing in the sample shown. In some cases a Church card is enclosed, worded:

Please present this card at
St. Paul's Church
on Friday, the twenty-fourth of June
at two o'clock.

Most of your work will be confined to Invitations and Announcements, with fewer Reception and At Home cards. You may not be asked for a Church card until well into your printing career.

While much wedding stationery is engraved, a large quantity of it is turned out by the raised printing process, using the dull or mat finish compound, and if it is done properly, most people are not aware of any difference. Type founders have reproduced exactly the style of lettering which engravers use, so everything, including price, is in favor of the printer.

Type Styles For Announcements

Type faces for announcements are somewhat more restricted than for most work. Scripts are always acceptable, and the lighter, more delicate styles of Old English. Certain romans which follow the styles of engraved invitations such as Typo Roman and Typo Roman Shaded are very popular.

Type sizes depend on the body on which the type is cast, which in turn is governed by the length of the projecting (ascending or descending) strokes in the type face. For wedding invitations this usually calls for 14 or 18 point. You will find an accumulation of such invitations from various sources of great help in deciding on sizes, styles, layouts, etc.

Announcement

Mr. and Mrs. Peter Owens McCullen

announce the marriage of their daughter

Carol Ann

to

Mr. William Bentley Woodruff

Friday, the twenty-sixth of June

One thousand nine hundred and fifty-nine

Hartford, Connecticut

Type used in this specimen is Typo Roman

Correct Forms for Personal Cards, etc.

A man's personal card (as contrasted to his business card) is usually about three inches by one and one-half inches, whether he be married or single.

A woman's card, married or single, should be approximately 2 x 2⅞ inches.

The standard size for a man's business card is 2 x 3 7/16 inches, although sometimes you will find customers who for reasons of their own may want some other size which they will select.

The correct styles of type for cards are not hard-and-fast. For business work you have almost the run of the type specimen book, but personal cards usually are set in an unobtrusive and conventional face, such as the block style letters (gothics in printing language), scripts and Old English variations. Sizes depend on the face of type used. Most of the Old English faces and scripts are cast on a large body to take care of long ascending and descending parts of the letter, so the point size for card work will be considerably bigger than in the gothics. The latter are very often confined to the three or four six point sizes which are for the printer's convenience all cast on that one body, but the more ornate types usually require ten, twelve or fourteen point body to give the same readability and correct appearance. The exact sizes must be determined when you are selecting the type face itself.

The proper phraseology for a married woman's card is "Mrs. George Arthur Stanley" — the middle name spelled out, not abbreviated. Even though her husband may die, she continues to use his full name rather than her own. After his death, if her son was named for his father, and drops the "Jr." she may use simply "Mrs. Stanley." The son's wife, of course, drops the "Jr." at the same time, making her card identical with the one her mother-in-law used previously.

If there is but one daughter in the family, her formal card may read either "Miss Stanley" or "Miss Dorothy Stanley." When there is more than one daughter, the latter form (first and last name) is used.

As noted elsewhere, a man has a right to use "Mr." on formal personal cards, with full name spelled out as on his wife's card. If he has been handed four names instead of three, he can use an initial for any one of them he wishes to soft-pedal. If a junior, he should show it, either as "Jr." or "junior" — no capital J in the second alternative. "Mr." is correct on a young man's card when he has reached college age.

A doctor, minister, priest or judge may use the prefixes "Dr.", "Rev.", "Judge", etc. on a personal card, but for business or professional use the correct wording for a doctor or dentist is "George Smith, M.D.," or "Henry Smith, D.D.S."

Addresses are correctly placed in the lower right hand corner on personal cards.

Business Card Forms

In general, business cards need follow no particular form. The most important point is to see that the desired information appears on them. Some cards have the name of the individual in the middle, with that of the firm he represents below or at one corner. Others reverse this, with the firm name in the center, and the representative's name in the lower left hand corner. Many cards not only contain names and addresses, but include information about the merchandise or services offered,

Reception

from four to eight at the home

1950 Broad Avenue

Hartford

At Home

after August twenty-fourth

1847 Silver Road

Hartford

Type used in these specimens is Typo Roman

and others are of the folder variety (double regular size) with more details to help the user acquaint the person on whom he is calling with his line.

As already mentioned, there are no particular limitations on type styles which may be used on business cards, except to keep the sizes within bounds, but a lot of cards are still being used with variations of the long accepted gothics. Sometimes a small cut of the company trademark or of the merchandise it sells is included, more often if the folder-card is used.

Lesson 20—Questions

1. *What is the difference between a wedding announcement and a wedding invitation?*
2. *What styles of type are usually used for wedding invitations and announcements?*
3. *What are swash characters?*
4. *What is the meaning of substance numbers?*
5. *When printing announcements and invitations, why is it necessary to get exact wording and spelling from the customer?*

The Printer's DICTIONARY

"S"

(Continued)

Stone-proof—Proof made on the imposing surface, no matter whether that happens to be made of actual stone or not.

Stone-work — Laying out and locking up forms.

Straight Matter—Any type composition which does not contain display lines. For instance, if a page of The Printing Course were to be set up without any headlines, it would all be straight matter.

String-and-Button Envelope—Envelopes whose flap is fastened by winding a string attached to the envelope around a tough fibre disc (button).

Strip Material—Leads, slugs, rule, etc. made in strips.

Substance Numbers—The method by which various weights of papers are identified. For instance, ordinary bond paper weighs 20 pounds to the five hundred sheets 17x22 inches, and all bond paper of that weight, no matter what the size of the sheet, is known as substance 20. For book paper, the governing size is 25x38. Cardboard is figured on the 22x28 size, and weight is on 500 sheets, same as paper, altho it is often sold by the hundred. Some efforts have been made to figure on the basis of one thousand sheets, which makes No. 20 paper No. 40, etc.

3 5 ⅝ ⅜ ½ 7/ ⅞ 8/ 9/ 5 4

Superior and Inferior Figures

Superior Figures and Letters—Characters set above the general line of the type, such as are used for mathematical work, reference work, etc. The opposite of inferior characters which are set below the line.

Swash Characters—Letters having ornamental sweeps or tailpieces. Some styles of type have them regularly, others are made with regular letters as well as

Swash Characters—*y r A M R*

swash characters. Most styles do not have them at all.

"T"

Tack — Stickiness or adhesiveness in ink, rollers, etc.

Tagboard — Manila colored card stock suitable for tags and similar work.

Take—The copy allotted to a single compositor.

Text—The body of the job as distinguished from the heading, pictures, index, notes, etc. The name used also for various styles of Old English.

Thermography—Raised printing by use of embossing compounds and heat, i.e., plateless engraving or embossing.

Thin Spaces—4 or 5-em (4-to-em, 5-to-em) spaces, in metal, one point in brass, and one-half point in copper spaces.

Tint Block—A flat and usually solid color plate used in printing tinted backgrounds. May be of zinc, copper, wood, linoleum, or any other satisfactory material.

"30"—At the end of matter, telegraphic dispatches, means "the end," "finished." There has been a lot of argument as to its origin, and many different theories have been advanced by those supposed to be "in the know." In all probability it is derived from the Morse code used in telegraphy, altho many disagree on this.

Tint—Any variation of a color made by using it with white.

Title—In addition to its obvious meanings, it is also applied to certain faces of type which are very low on the body and are usually without any lower case, in other words, for title work exclusively.

Tooling—Work on cuts to bring up the highlights. Such work, because it is done by hand, adds greatly to the expense of the cut. The opposite is burnishing, which rubs down the halftone dots and makes the shades more solid or deeper.

Top Sheet—The upper sheet on the platen, used for making ready (building up the light or low spots) on the printed job.

Transpose—To change the order of words, sentences, paragraphs, etc. The proofreader's mark for this is "tr."

Tub-Sized—Paper on which the coating or sizing is put on in a tub or vat, as contrasted to that on which sizing is put in the pulp before the paper is made.

Turned Letter—A letter put in upside down to call attention to some point to be taken care of before running. If a certain letter is exhausted, a turned letter of similar size may be placed in, to be removed and the correct letter inserted before printing.

Tweezers

Tweezers—Tool used for handling pieces of type in a form—pulling them out, or placing them in. Care must be exercised in using tweezers that they do not injure the face of the type. Some printing offices will not allow the use of tweezers because of the possibility of careless handling of them, but they are safe and useful when due care is taken.

Two On—Two identical or different forms or pages printed side by side at the same impression.

Tympan—The sheets of paper on the platen, which are used to make a pad for the sheet or card to rest on when the impression is made. The tympan also serves as a base for overlays. (See "overlays.")

Tympan Bales—The clamps which hold the tympan sheets onto the platen.

Type-high—The American standard of type height is .918 of an inch. Anything that height is type-high, the correct height for printing.

Typewriter Type—Type made in facsimile of the characters of a typewriter, so that form letters or

ELITE typewriter #/"%483

similar work may be turned out on the printing press.

Typographic Numbering Machine—Machines which are set in the type form, for printing consecutive numbers on tickets, forms, etc.

The pressure of the printing impression between platen and type

Typographic numbering machine

form causes the numbers to change automatically, and by changing the bands or wheels on which the numbers are mounted, different numbering can be obtained such as all odd numbers, all even numbers, skip three, skip four, numbering backwards, etc. Printers sometimes use hand numbering machines on small jobs, which are the same as are used in offices for numbering orders, invoices, etc.

Typography—The art of printing from type.

"U"

Underlay—Pieces of thin paper or card used under the type, cuts, or any part of the form to bring up the low spots.

Upper Case—Capital letters, from the fact that when news and book work was all done by hand, the upper type case on the case stand held the capitals, and lower case the small letters.

"V"

Varnish—Material used in printing ink as a vehicle to hold the pigment or color, just as oil is used in paint.

Vellum or Vellum Finish—True vellum is calfskin, altho the term is more or less loosely applied to all kinds of treated skins used as parchment, and the term vellum finish is used for all kinds of paper or card having a smooth, velvety finish resembling real vellum.

Vignetted Halftone — A halftone in which the edges of the picture fade away gradually without a clear cut outline. Such cuts sometimes are part vignetted, sometimes wholly so.

"W"

Warm Colors—Red, yellow, orange. **Cold Colors** — Blue, white, grey, etc.

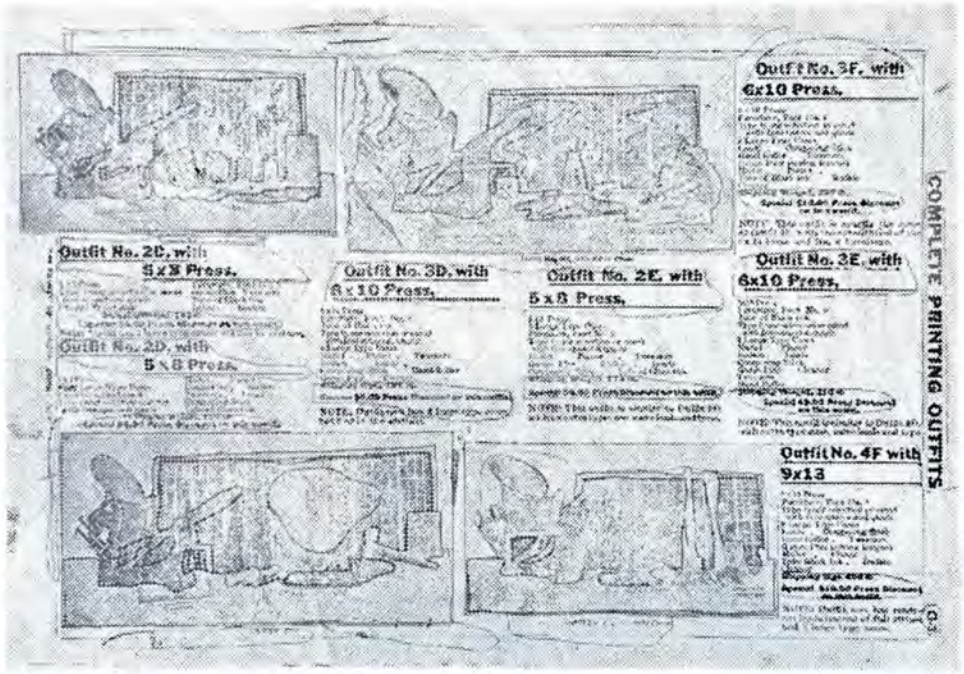
Wash Drawings—A drawing made with a brush, usually with india ink, in various depths of tone, so that it must be reproduced by halftone instead of as a line drawing.

Washing Up—Cleaning rollers type, press, etc.

Water Color Inks and Printing—Printing with water color inks, which gives a pastel or offset appearance to the work. Ordinary printer's rollers cannot be used for it without waterproofing them, and it is advisable to print from special rubber or composition plates. A considerably different technique is used for this and it is enough more difficult to execute so that the average printer finds it best to confine his work to standard oil inks. Water color printing is at its best in poster effects and on cover stocks.

(To be continued)

A. Trial impression without makeready



B. Markings on trial impression in showing parts needing overlay

LESSON TWENTY-ONE

Examples of Makeready (Overlay)

Figure A is the original impression of the page, taken on the press without makeready. Figure B shows this same sheet with the parts outlined in pencil which must be built up on the back. Figure C is the back of the same sheet, showing the paper overlays pasted on to correspond to the markings

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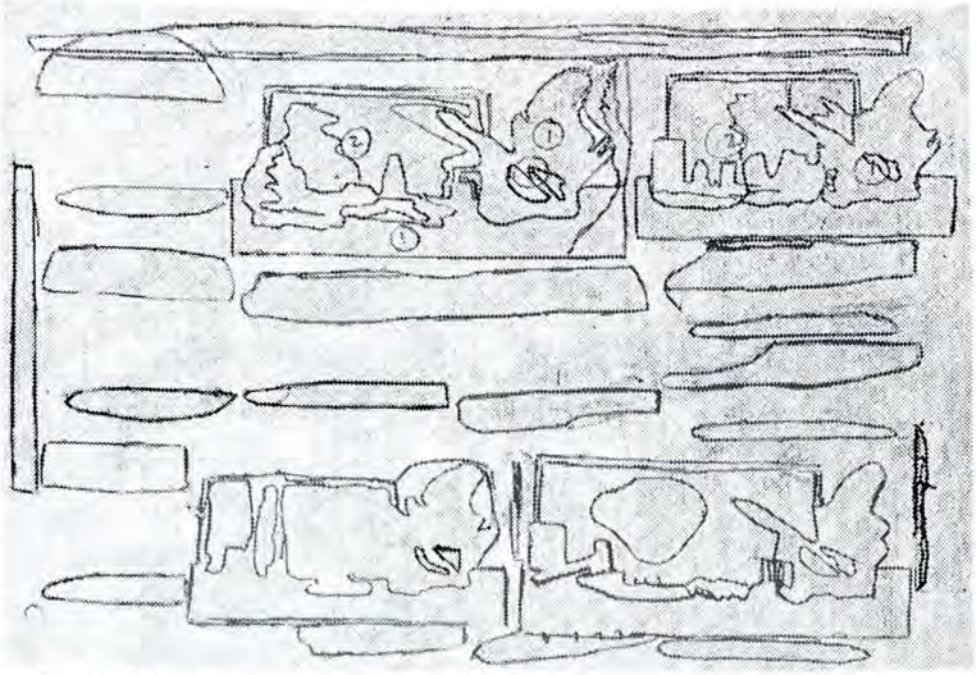
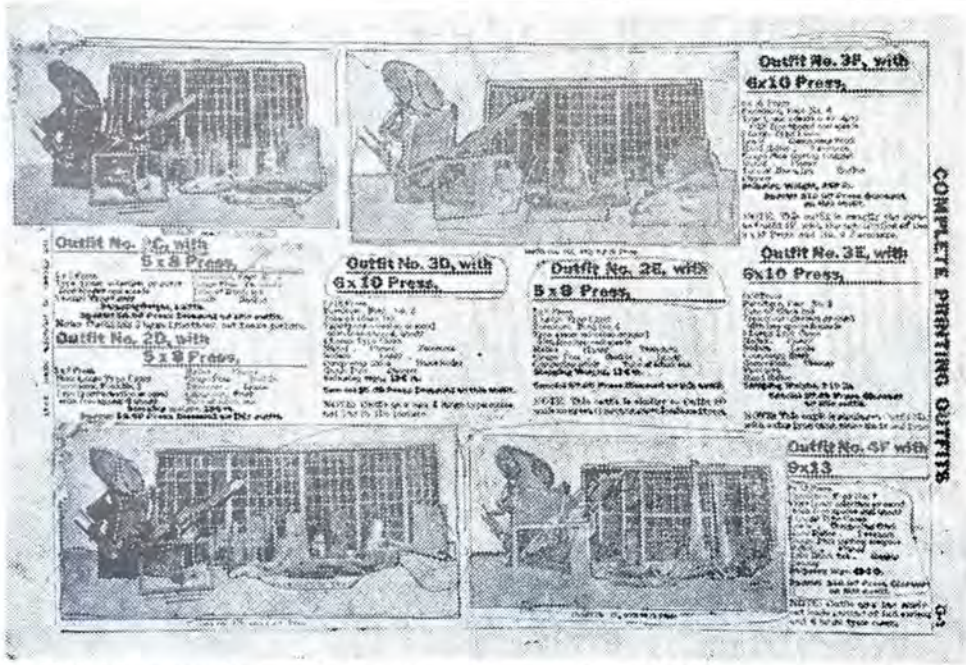
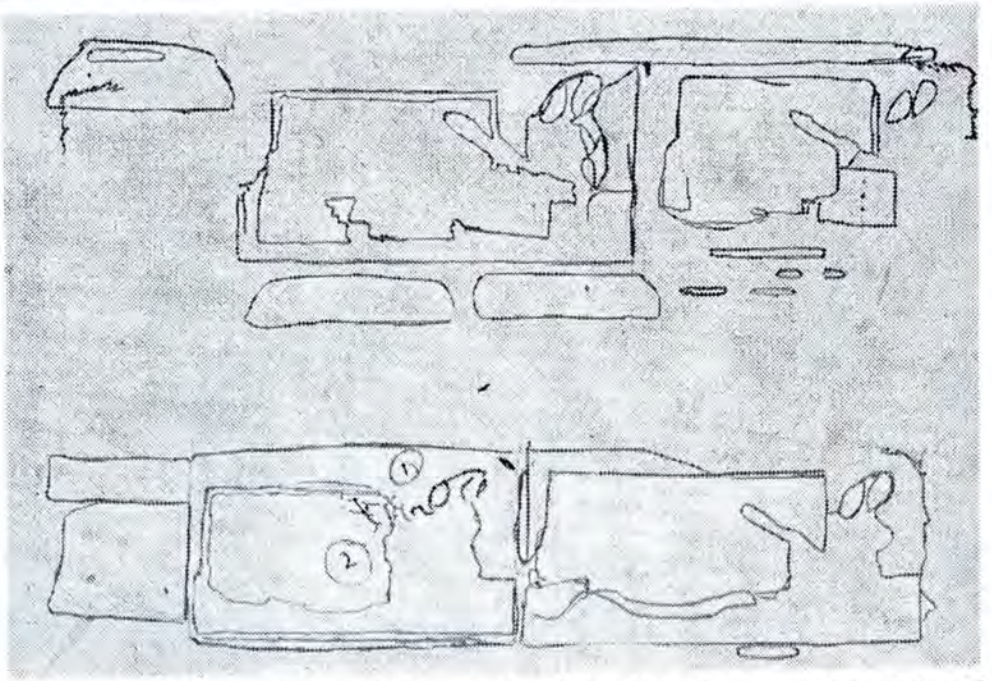


C. Back of sheet B showing how thin pieces of paper have been pasted over it to give required additional impression. Spots marked "2" have two thicknesses pasted on

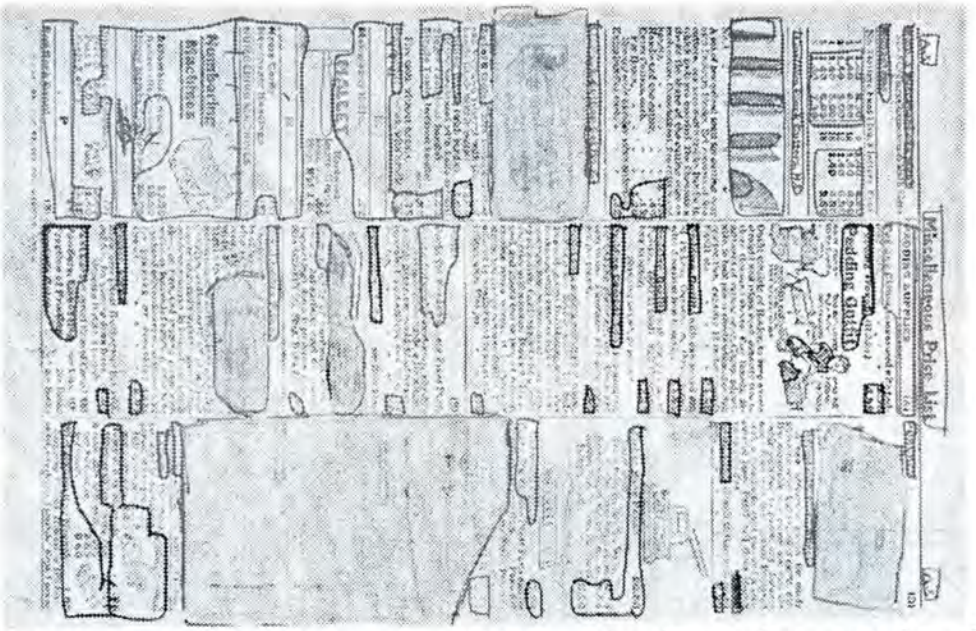


D. Trial impression made on press after overlays "C" were put on with markings which result in another makeready sheet

on the front. A piece of carbon paper with the carbon side up was used to get the correct markings on the back. Note that there are two overlays in parts, designated by the figures 1 and 2. These spots required more building up than those where singles were used.

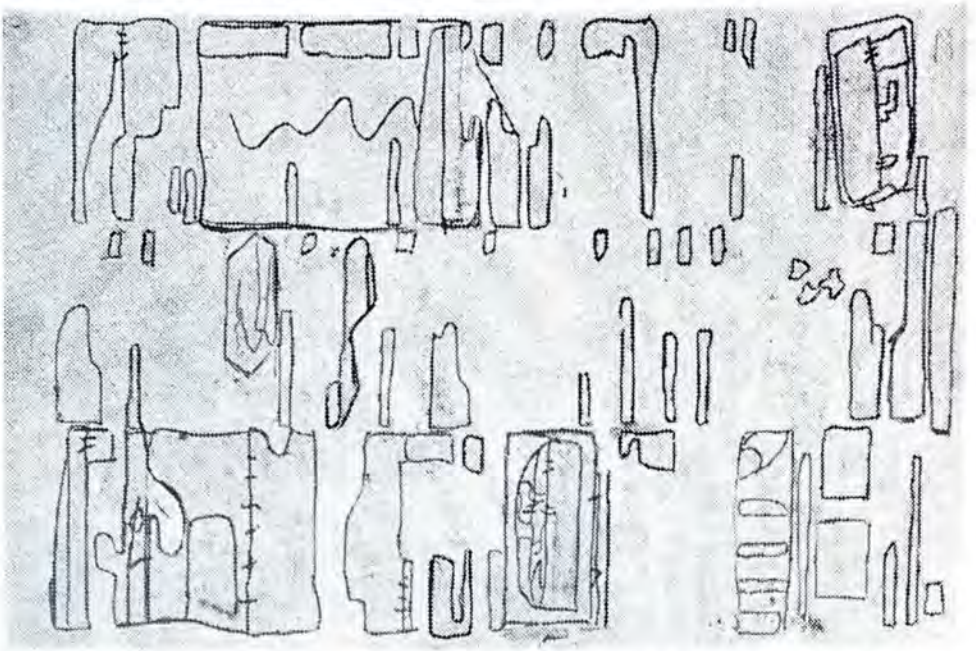


E. Reverse of D showing pasted up spots. When this sheet was inserted under tympan the page came up satisfactorily all over, and was ready to run

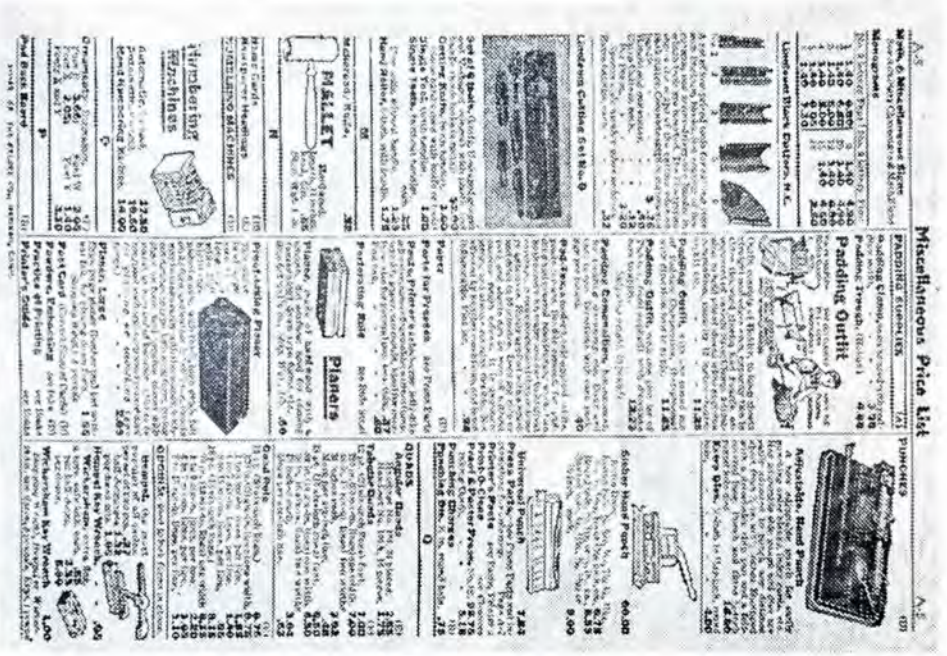


G. First proof of type page, with markings, and a few overlays pasted on the front side to save inserting another sheet under tympan

This pasted up page (called a spotsheet) was then inserted under the drawsheet and 2 pieces of book paper on the tympan, and another impression was taken. Figure D is the result, which, as you will see, required further attention. Figure E is the reverse side of D after the necessary overlays have been applied. This was inserted under the drawsheet plus 2 book paper sheets in addition to



H. Overlays applied to back of G, BEFORE putting those on which show on the front



I. The finished type page, after use of overlays as shown in G and H

the first pasted-up (spot) sheet, and the final result was the page as it was finally run on the press — good clear impression, with snappy, lively halftones.

Figure G is a page of type, marked up in the same way as Figure A. Figure H shows the other side, with the applied overlays. The impression taken after these overlays were made, showed the necessity for a little more building up in the spots which have paper pasted over them in

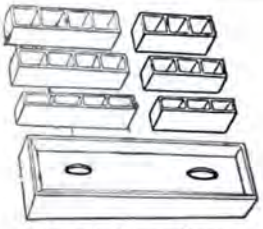
Figure G. To save making up another sheet, these were applied to the FRONT of the sheet, as shown. In other words, Figure G when it first came off the press did not have the completely blank spots on it, which are caused in our illustration because it was later pasted up on the front as well as the back. Figure I is the page as it was finally run on the press, with both front and back overlays in place.

This page, as well as the one showing the halftones, had the spot sheets placed under not only the drawsheet (top sheet) but also under two sheets of book paper. This has a tendency to smooth off what would otherwise be sharp outlines where the pasted up spots are located.

Makeready of this kind produces finer work with less impression than would be required if the whole form were given more squeeze, and is always used where quality work is desired.

Metal Furniture and Quotations

For the filling in of long, straight spaces, wood furniture will do the trick as well as anything, but when you have spaces more nearly as wide as they are long, metal furniture and quotations can't be beat. Very accurate furniture is absolutely necessary around display material, cuts, etc., because you don't want to lift up the form and have a good sized chunk drop out and pi. When wood furniture is new, it is accurate, but as time goes by and the wood gets worn, it cannot be trusted as it could at first. Moreover, short, fat pieces of it require extremely accurate sawing, and unless you have some kind of very trustworthy circular saw to cut it on, you may saw it ever so slightly on a bias. That little bit of crookedness may be all that will be necessary to cause the form to bulge, and if it doesn't pi, create a lot of trouble in getting the job to look straight.



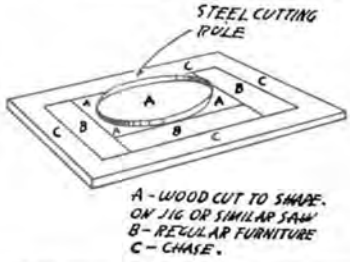
Metal Furniture

Metal furniture, on the other hand, comes in short, wide pieces that may be put in the form with the absolute assurance that it is accurate. If you need an equal amount of space on each side of a cut, you can get it with metal furniture or metal quotation furniture. There is no wear to it; it does not bulge, swell or shrink, and once you have it, it is good forever. Much time can be saved in getting a job ready and getting it right by using metal quotations and metal furniture. Like quotation and metal furniture, cast iron furniture, while more expensive, is extremely accurate and it lasts forever.

Steel Cutting Dies

At times you may get a job which requires either a **round**, oval, or odd shaped piece of paper —such as for a label, for instance. The cutting of the paper or the card may be done on your press, using a die, and feeding the stock through the press without rollers or ink. You will find that it is easier to do the printing first, and the cutting afterward. Steel cutting rule can be formed into the

shape required, and it can be held in place with furniture or wood blocks cut to shape. For straight cuts, the rule need only be cut in pieces, and carefully joined. For curved or circular work, the rule should be heated to remove the temper, bent, and hardened again. Some printers claim that on curved jobs, it is best to get hold of flat spring wire about an inch wide such as the spring from an old phonograph and use that. The wire will have to be given a sharp edge with a file before using.



Many printers make the die a permanent fixture by pouring melted lead or type metal in around the rule.

Dies of this kind may be made for cutting out envelopes of odd sizes in small quantities. A thin sheet of zinc can be used on the platen for a counter die—or lead, although plain lead is a little soft. Sheet copper, brass, or aluminum will also serve. Tin is too hard, because it is really tin plated on steel. Try making a die sometime and see what the possibilities are.

Type Styles

Type styles come and go. They pass thru cycles, just as fashions in clothes. It is obvious that, even at any given time, nobody can say a printer should have such-and-such faces of type, because any type founder's sales will show far more styles of type in good demand than any one printer can afford.

Type selection, therefore, must be governed by your personal choice for the kinds of work you are doing, and your choice will depend to some extent on customer's preferences as far as they express them, either directly or thru the samples they submit to you for reproduction. Do not, however, become stampeded into buying a lot of different styles when you already have type of the right kind, but need more of it. Enough of a few sound designs will be of far more use to you than too little of many.

Save samples of printed matter that appeal to you, and watch advertising in metropolitan newspapers and magazines. In that way you will pick up many ideas, not only of proper layouts, but on type styles which are useful, attractive and popular. You'll have to buy new styles of type at times, to properly execute orders, but frequently you will find a satisfactory substitute in your own cases.

Lesson 21—Questions

1. *What is a "spotsheet"?*
2. *Why is it "buried" under at least two sheets of book paper in the packing?*
3. *Is one spotsheet enough or are two always necessary?*
4. *Why are metal furniture and metal quotations better than wood furniture?*
5. *How would you make a die for cutting out odd shaped labels, etc., on your press?*

In Conclusion

With this lesson the Printing Course concludes.

It has been a source of great satisfaction to us that so many printers with experience have taken this course as a "refresher", even tho it was written for those with little or no previous training.

We welcome any and all suggestions. The course is the result of over seventy-five years' close contact with printers of all kinds, and the furnishing of instructions to them and to beginners. But, like the experienced printers who have been following this course, we know we have no monopoly on ideas, and welcome fresh viewpoints.

We hope and feel confident that the course has been of help to you, and that you have carefully preserved the lessons so that you will have them for future reference.

The Printer's DICTIONARY

"W"

(Continued)

Watermark — Words, letters or designs impressed in paper while it is in course of manufacture and is still in a semi-liquid state. This impression thins the paper and thus makes the light shine thru the lines or letters made more readily. Real watermarks have more or less hazy outlines, while so called rubberstamp or imitation watermarks have very cleancut lines.

W. F.—In proof reading, wrong font.

Wickersham Quoin

Wickersham Quoins—Devices for locking or tightening the form, consisting of a small rectangular box, in which are two wedges held together by small springs, and in the center a circular eccentric wedge, with a square hole in the middle for insertion of the key. Turning of the circular wedge with the key spreads the other two wedges apart, tightening the form, while the springs bring the wedges back, loosening the form, when the key is turned further or turned back.

Widow Line—If, in making up the page, the printer uses a line with a single word by itself at the top of the column, he has left a "makeup widow." To put a lone word (the end word of a paragraph) in such a position is considered poor workmanship, and rather than to do that it is customary to space out the previous line to bring more words onto the last. It is not customary to use anything but a full line at the top if at all possible, and if the number of words in the sentence won't normally fill the line, they are either spaced out so that they will, or another line brought over to head the column or page.

Window Envelopes — Envelopes having a piece of transparent paper set into an opening in the front so that the address of the letter inside, when properly folded, will show thru and make a separate address on the envelope unnecessary.

Wire Side — The rougher side of a sheet of paper. This side comes in contact with the wire cloth on the paper making machine, and often the faint outlines of the "wire" may be seen.

With the Grain—Paper and cardboard have a "grain," that is, the fibre of the paper are all in one general direction. Many papers and cardboards fold much better along the direction the fibres take than they do the opposite (against the grain). There is likely to be less cracking when the folds go with the grain.

Woodcut — A cut for printing made on wood. It is not usually printed from, but is electrotyped, and the electrotype is used for the actual printing. Up to around thirty-five years ago, when halftones came into common use, woodcuts were the common method of illustrating, but there is so much skill required to make one, that the cheaper halftones soon superceded them. In the days of woodcuts the wood engraver was just as important if not more so than the artists who made the design, because a poor engraver could not satisfactorily reproduce the work of the artist. With the advent of halftones it was possible to make photographic reproduction of art work, and the skill of the wood engraver was no longer necessary. In the last several years there has been a revival of wood engraving for some high grade illustrating work, but the number of competent men in the business is now very restricted, and high prices for really good work are the rule. Of course, a certain grade of woodcut work has always been used in mail order and wholesale catalogs where it has not been felt that other processes would satisfactorily bring out detail on the kind of paper being used for the printing.

Wood Type—Type faces cut on wood. Large sizes cost much less than would metal type of the same size. In the early days of printing, wood type was used exclusively.

Work and Turn—If locking up the whole form at once so that making the same impression on both sides gives you two complete jobs, you have done it "work and turn."

Wrong Font—Used mostly as a proofreading term, the letters w. f. when indicated on a proof mean that type of the wrong size or series are mixed in the set-up matter.

"Z"

Zinc—The much used term for a zinc etching or engraving; that is, a printing plate or cut with a zinc face which has been etched away so that the parts which are to print are the only ones left type high. Line etchings and coarse screen halftones are very often zincs. As in the case of woodcuts and other printing plates, it is customary to keep the zinc as a model and have an electrotype made from it if it is to be used for very long runs, altho actually the zinc will last much longer than the ordinary electrotype, because the zinc is tougher and harder