

# "OPENING UP" MONOTYPE TYPE FACES

## *The Monotype Unit System*

### **Monotype Machine Typesetting**

INVENTIONS embodied in the Monotype made it possible to apply the advantages of machine typesetting to all classes of printing. Without the Monotype a large proportion of the world's typesetting would to this day still be laboriously done by hand.

The Monotype has supplanted all other mechanical means of composing single types. It opened up new fields for the use of machine composition. No other typesetting machine includes within the scope of its operation so wide a range of accomplishment, such versatility in its product, nor contributes so much to improvement in the quality of printing.

On the Monotype, word spacing may be automatically equal and in proportion to the type size. Its type may be cast on either a condensed or extended body at the will of the operator. The length of the line is the only limitation to the number of justified columns of words, figures or characters.

On the Monotype up to six complete alphabets of three different type faces may be combined in a single keyboard arrangement for use on one job. Different point sizes may be cast and aligned on the same body in the same line. Special characters for the work in hand may be keyboarded by the operator without the loss of time. Keyboard ribbons from which type is cast may be again used at any time or at any place on any standard Monotype caster.

Human hands have never manipulated the keyboard of the Monotype to its maximum capacity. The average speed of Monotype production on all classes of matter is greater than that of any other method of typesetting.

The Monotype may be both a typesetting machine and a type, rule and material caster—as a piece of composing-room equipment it need know no idle hours.

These and other points of superiority have dictated the use of Monotypes in over four thousand printing plants, and have introduced them into every country where printing is done. More than twenty-four thousand Monotypes are in daily use.

### **The Monotype Unit System**

Each and every character (letter, figure, point, space, etc.) made on a Monotype machine is cast on its own body, the character being the unit. In this respect Monotype-cast type is exactly the same as foundry type, and therefore fundamentally different from the product of slug-casting machines, in which the line is the unit.

It is the casting of each letter on its own body, independent of other characters in the same font, which makes it possible to retain the integrity of the original design in type faces made available for Monotype Machine Typesetting. Both roman and italic characters are cast separately from different matrices, and neither need be distorted into conformity with each other as would be necessary if more than one character were cut on the same matrix. This feature is one

of the advantages inherent in the Monotype Single Type System of machine and hand composition.

In type faces available for Monotype Machine Typesetting the set-width of the body on which each character is cast is definitely established for each font, the total width of the capital and lowercase alphabets determining the "set" of the face. Thus, if the measurement of the alphabets determines that the em of the face shall be 8 points wide, then that face is known as an "8-set" face, regardless of its point size; or, if the em of a face is determined to be  $10\frac{1}{2}$  points wide, then that face is known as a "10½ set" face, and so on. The em of each set is divided into 18 equal parts or units, and each character in the font is designed to be cast on a body which is a certain number of units wide. (In a very few faces a character, such as the capital W, for instance, may be even wider than 18 units.) This method of assigning a definite width of body to each character composed on the Monotype Typesetting Machine is known as the "Monotype Unit System of Character Measurement." It is an exclusive feature of Monotype Machine Typesetting.

### **Each Monotype Face Has a Fixed "Set" Width**

The Monotype Unit System of Character Measurement gives to each character a definite width, and the width of all characters in the same font bears a fixed relation to each other. The Monotype Unit System has been a boon to the printing industry. In addition to conferring on the Monotype method of typesetting many advantages in the setting of straight matter, it has provided the best and most economical method of setting tabular and other intricate matter, and has brought within the scope of machine typesetting certain classes of work which are not within the ability of even the hand compositor properly to set and justify. No other method of typesetting offers the advantages of a complete unit system of composition—the Monotype Unit System is an exclusive Monotype feature.

The Monotype Unit System enables the operator to set several perfectly justified columns of words in the same line, each column being justified by itself; to mix justified columns of words, figures, letters and special characters in the same line; to intersperse vertical rules, 2- or 3-line figures, special symbols, etc.; to increase or decrease at will the set-size of letters or characters. This feature saves the time which, under other methods of typesetting, is spent in hand collating and assembling.

The Monotype Unit System makes it possible to fit copy accurately to the space to be occupied. Setting type around cuts or to irregular margins becomes a matter of convenience and perfection.

Printers of railroad tariffs, mathematical and scientific works, tabulated reports, and all classes of matter requiring justification of words and figures in columns and lines, now depend almost entirely on the Monotype. On such work the Monotype Unit System is saving hundreds of thousands of dollars annually.

## "OPENING UP" MONOTYPE TYPE FACES

### Changing the "Set" of Monotype Faces

In designing a type face for Monotype Machine Typesetting each character may be drawn without any limitations imposed by other characters. Since each character is cast on its own individual body, the "set" width of the roman and the italic characters is established separately. Usually the roman and italic are designed to be the same set width, and are combined in the same keyboard arrangement for machine typesetting; although it sometimes happens, particularly in bold-face types, that the italic font may have a set width different from the roman.

Although each face is given a normal set when designed, the set of any face may be either increased or decreased at will, thus making it possible to make the body of all characters of the font uniformly either wider or narrower if it is desired to do so.

Since most Monotype type faces, especially those intended for machine typesetting, are designed to be cast on as narrow a set as possible ("close fitting" being one of the characteristic advantages of Monotype machine typesetting), it is not often desired to cast type on a body narrower than that originally designed, although this can be done if necessary. However, it is quite frequently desired to widen the set to increase the width of the type bodies, and on the Monotype this is very often done.

### "Opening Up" Monotype Faces

The effect of increasing the set width of any type face is to add to the amount of white space between each letter and thus "open up" the face.

Let us now see how lines of type, each of a different set width, will look when compared:

This line is 8 point Binny Old Style, 8 $\frac{1}{2}$  set  
This line is 8 point Binny Old Style, 8 $\frac{1}{2}$  set  
This line is 8 point Binny Old Style, 8 $\frac{1}{2}$  set  
This line is 8 point Binny Old Style, 9 set  
(8 $\frac{1}{2}$  is the normal set)

This line is 10 point Binny Old Style, 10 set  
This line is 10 point Binny Old Style, 10 $\frac{1}{2}$  set  
This line is 10 point Binny Old Style, 10 $\frac{1}{2}$  set  
This line is 10 point Binny Old Style, 10 $\frac{1}{2}$  set  
(10 $\frac{1}{2}$  is the normal set)

This line is 12 point Binny Old Style, 11 $\frac{3}{4}$  set  
This line is 12 point Binny Old Style, 12 set  
This line is 12 point Binny Old Style, 12 $\frac{1}{2}$   
This line is 12 point Binny Old Style, 12 $\frac{1}{2}$   
(12 is the normal set)

## A Comparison of Monotype "Set" Sizes

Of course, when the set width of a type face is increased, the body on which each character is cast will be widened, thereby increasing the amount of space between the characters, and each group of characters or words will occupy

proportionately greater space from side to side. To illustrate we show here the same "copy" set in 8 point Binny Old Style, 8 $\frac{1}{4}$  set, in 8 $\frac{1}{2}$  set (the normal set of this face), and in 8 $\frac{3}{4}$  set:

### 8 Pt. No. 21E, 8 $\frac{1}{4}$ Set

When the set width of a type face is increased, the body on which each character is cast will be widened, thereby increasing the amount of space between the characters, and each group of characters or words will occupy proportionately greater space from side to side. In designing a type face for Monotype Machine Typesetting the "set" width of the roman and italic characters is established separately, since each character is cast on its own individual body. Usually the roman and italic are designed to be the same set-size (or width), and are combined in the same keyboard arrangement for machine typesetting; although it sometimes happens, particularly in bold-face types, that the italic font may have a set width different from the roman. This is set in 8 point, 8 $\frac{1}{4}$  set, Monotype Binny Old Style, No. 21E.

### 8 Pt. No. 21E, 8 $\frac{1}{2}$ Set

When the set width of a type face is increased, the body on which each character is cast will be widened, thereby increasing the amount of space between the characters, and each group of characters or words will occupy proportionately greater space from side to side. In designing a type face for Monotype Machine Typesetting the "set" width of the roman and italic characters is established separately, since each character is cast on its own individual body. Usually the roman and italic are designed to be the same set-size (or width), and are combined in the same keyboard arrangement for machine typesetting; although it sometimes happens, particularly in bold-face types, that the italic font may have a set width different from the roman. This is set in 8 point, 8 $\frac{1}{2}$ -set Monotype Binny Old Style, No. 21E.

### 8 Pt. No. 21E, 8 $\frac{3}{4}$ Set

When the set width of a type face is increased, the body on which each character is cast will be widened, thereby increasing the amount of space between the characters, and each group of characters or words will occupy proportionately greater space from side to side. In designing a type face for Monotype Machine Typesetting the "set" width of the roman and italic characters is established separately, since each character is cast on its own individual body. Usually the roman and italic are designed to be the same set-size (or width), and are combined in the same keyboard arrangement for machine typesetting; although it sometimes happens, particularly in bold-face types, that the italic font may have a set width different from the roman. This is set in 8 point, 8 $\frac{3}{4}$ -set Monotype Binny Old Style, No. 21E.

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### Monotype Roman and Bold Faces Combined

Many Monotype roman and italic, and bold and bold italic type faces are so designed that the normal set of each face will permit them to be combined in the same die case for simultaneous composition. Typical of these normal combinations is 8 point Sans Serif Medium, No. 334J, with Sans Serif Extrabold, No. 332J, each 8½ set, a few specimen lines of which are shown here:

**Monotype Single Types Are Best for Either Letter-Press or Offset Printing**—Those qualities in Monotype machine-set and hand-set type which give such a clear and sharp impression on paper when printed by Letter-press methods are no less important in producing the proofs from which plates are made for printing on Offset presses. Brand new single type for every job, each of uniform height with a perfect printing surface, assures best results for either method of printing.

Another important advantage of the ability to change the set-size of a Monotype face is achieved in combining roman and bold faces of different sets in machine composition. Suppose, for instance, we wish to combine a normal 8-set roman (Inland Caslon, No. 137E) with an 8½-set bold face (Caslon Bold, No. 79J) of the same point size. We may do this by simply increasing the set-size of the roman face like this:

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Or, in cases where we wish to combine a roman face with a bold face of a narrower set (for instance, 10 point Century Schoolbook, No. 420A, 10½ set, with 10 point Century Bold, No. 118J, 10-set), we can do this by simply increasing the set-size of the bold face to the same set as the roman, as in the following example:-

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Another example of a combination of a roman face with a bold face of wider set shows 12 point Bookman, No. 98J, 12 set, with Rockwell, No. 189J, 12½ set:

**Monotype Single Types Are Best for Either Letter-Press or Offset Printing**—Those qualities in Monotype machine-set and hand-set type which give such a clear and sharp impression on paper when printed by Letter-press methods are

There are often times when it is desired to combine faces of different point sizes in the same line. An example of how this may be done on the Monotype combines an 8-point, 8½-set roman (Binny Old Style, No. 21E), with a 10-point, 8½-set bold face (Cheltenham Bold Condensed, No. 88J), like this:

### Monotype Single Types Are Best for Either Letter

**Press or Offset Printing**—Those qualities in Monotype machine-set and hand-set type which give such a clear and sharp impression on paper when printed by Letter-press methods are no less important in producing the proofs from which plates are made for printing on Offset presses. Brand new single type for every job, each of uniform height with a perfect printing surface, assures best results for either method of printing.

These are typical examples of the flexibility of the Monotype Method of Typesetting which are employed regularly and as a matter of every-day occurrence by Monotype users the world over. In addition, there are many other ways in which the ability to change the set-size of Monotype faces may be profitably and conveniently employed.

**This important feature makes it possible for Monotype users to combine, for machine typesetting, practically any roman, bold and italic face which they may have in their Monotype resources, without the necessity of purchasing special "mixing" machines for that purpose.**

### Good Spacing a Monotype Characteristic

Many times it is desired or becomes necessary to set matter in measures so narrow that it is impossible to avoid either wide spacing between the lines or letter-spacing, and often both. Again the ability of the Monotype to vary the width of the body on which each character is cast comes into play with great advantage in saving time and maintaining high quality of composition. Here is a typical example of a "run around" set on the Monotype:

The Monotype Display Composition Caster makes and sets single type in justified lines, in all sizes from 4 to 18 point. It is automatically controlled by a perforated paper ribbon previously prepared. It casts type, quads and spaces in all sizes from 4 to 18 point. It can also be equipped to cast type, ornaments, piece borders, etc., in all sizes up to 36 point, and to make rules, leads, and slugs in all sizes from 1½ point up to 12 point. Only in the Monotype is combined a typesetting machine, a type-casting machine and a machine for making rules, leads and slugs, cast in strips or

cut to labor-saving measures. No operator has ever manipulated a Monotype Keyboard to the limit of its capacity. Production is further increased by the separation of keyboard from the casting machine. Whatever niceties of typographical arrangement are transmitted to the keyboard by the operator are automatically reproduced by the composition caster. The most intricate tabular matter, the most complicated technical work, as well as the simplest of straight-matter are all composed on the Monotype Keyboard with far less effort and greater speed and accuracy.



Note the evenness of the letter-spacing in each line, and how the space between the letters is different in each letter-spaced line—just enough in each case to avoid wide word spacing and to fill the line completely.

## Monotype Typesetting Saves Space

Since slug-machine faces are invariably of a wider set than the same faces when composed on the Monotype, it is almost always possible to save space in composing any given piece of copy on the Monotype. An analysis of the generally used type faces available for composition on the Monotype and those used on slug machines shows this Monotype saving is from 5 to 20 per cent, depending on the type faces compared.

To illustrate this saving we reproduce here a part of one column which was printed in an issue of a printing trades magazine set on a slug-casting machine in 9 point Bodoni, and alongside it the same copy set on the Monotype in the same face and size. The comparative space occupied by the Monotype setting shows how much space may be saved by using Monotype Machine Typesetting, when Bodoni is the typeface used. Lines of Monotype type are always accurate in point-size.

It is also worthy of note that the slug-machine operator who set this slug-machine composition, in an effort to avoid unsightly spacing between words, spent a lot of time in letter spacing words by inserting spaces by hand—with-out in the least improving the typographical appearance of the composition.

### Slug-Machine Typesetting

And, in the end, to what extent is the printer dependent on direct credit from the banker? What actual power can the banker have in guiding the printer so long as there are so many suppliers ready to grant credit under standards which are practically non-existent? How much hope can there be in credit guidance by bankers so long as there are machinery manufacturers willing to put a machine into a plant "on trial" for a year? Where there is a division of responsibility for credit, and no constructive contact between those who share that responsibility, then there is bound to be irresponsibility.

### Improvement Needed in Art of Applying for Credit

The important problem of bank credit for printers is, therefore, not whether it is liberal or stringent, depending on general conditions, but whether there are any rational and sound standards on which it can be based. The banker is not certain what information he should have or demand and the printer does not know what he should give—if he has it. Therefore, be-

### Monotype Machine Typesetting

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(This space is saved)

## Monotype Letter-Spacing Is Uniform

We reproduced above a part of the contents of a printing trades paper originally set on a slug-casting machine. Let's refer to it again. Note the painstaking effort of the operator who set the matter at the right to avoid unsightly word spacing by inserting, by hand, spaces between letters *in a few words* in each line.

On the Monotype, when it becomes necessary to resort to letter-spacing, the operator does it on his keyboard, and because of the ability to widen the size of the type body on which each character is cast on the Monotype, the line emerges from the machine evenly letter-spaced over its entire length, the white space between the letters of all words in the same line being exactly the same. It is important to note that on the Monotype this white space between letters will be as little or as great as is necessary to fill the line completely, and that the machine selects the proper spacing automatically. Letter-spacing on the Monotype is a mechanical keyboard operation, and not a hand spacing operation, as on other machines. Here are typical lines to illustrate what we mean:

### Unequal Letter Spacing

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### Monotype Equal Letter Spacing

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