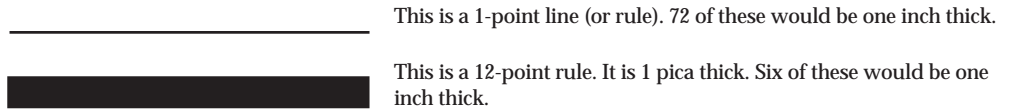


Points and picas

If you are trying to measure something very short or very thin, then inches are not precise enough. Originally English printers devised *picas* to precisely measure the width of type and *points* to precisely measure the height of type. Now those terms are used interchangeably. There are 12 points in one pica, 6 picas in one inch — or 72 points in one inch.



POINTS

- Thickness of rules
- Sizes of type (headlines, text, cutlines, etc.)
- All measurements smaller than a pica.

PICAS

- Lengths of rules
- Widths of text, photos, cutlines, gutters, etc.

INCHES

- Lengths of stories
- Depths of photos and ads (though some publications use picas for photo depths)

Type sizes

Type is measured in points. Body type is 7–12 point type, while display type starts at 14 point and goes to 127 point type. Traditionally, standard point sizes are 14, 18, 24, 30, 36, 42, 48, 54, 60 and 72. Using a personal computer, you can create headlines in one-point increments beginning at 4 point and going up to 650 point. Most page designers still begin with these standard sizes. The biggest headline you are likely to see is a

72 pt. head

and it is generally reserved for big stories on broadsheet newspapers. Most stories don't require headlines this big, yet if the headline is too small, the story may disappear. The smallest headline you are likely to see is

an 18 point headline

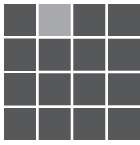
The 18 point headline is one-fourth the size of the 72 point headline. To determine the size of a headline, you measure only its height — from the bottom of the descenders to the top of the ascenders. Some typefaces look like they are different sizes because their x-height is different, but in fact when you measure them from ascender to descender, they are the same.



These typefaces are all set in 24 pt. type, but some look bigger than the others because of their x-height and weight (how light or dark they look). Compare the first sample to the rest. The typefaces are, from left: Garamond, Times, Impact, and Lubalin Graph

Optimum line length

As a general rule, the optimum line length is one-and-a-half times the lowercase alphabet of the typeface. The majority of high school newspapers are 5-column tabloids. In the past, the typical column width was about 2 inches, or 12 picas. As the cost of newsprint has gone up, printers have tried to economize by shrinking the page. That has caused a narrowing of the columns, and it is now common to find tabloids with 11 pica columns. Because of technical limitations and time, most newspapers have maintained a rigid column system. Now, with the introduction of desktop publishing programs such as PageMaker,



legibility

that has changed. Electronic paste-up allows page designers to play with columns in a much more flexible way. Because of this, there are a few things page designers should keep in mind. First, reading research indicates that narrow columns are not the most effective width for promoting easy and efficient reading. Experiments indicate that with the typefaces used by most newspapers, a 14- or 16-pica width is preferred. On the other hand, column widths which are wider than 23 picas are also hard to read. In general, column widths should be at least 9 picas wide but not greater than 19 picas wide.

Readability/ Legibility

Research shows that the most readable letters are lowercase letters printed in black ink on white paper. Common mistakes which actually make type more difficult to read are: Long passages in capital letters; long passages in italic; printing on colored paper, over tint blocks or over photos; long passages in boldface type, and the use of ornamented or otherwise defaced type. People read not by looking at each letter of a word, but by looking at the shape of each word's letters. And there are more clues on the top half of letters than on the bottom, generally speaking. Look at the word "legibility" at the top of this page and the next page. Cover the top half of the letters. Can you tell what word it spells just looking at the bottom half of a word's letters? Now cover the bottom half of the word. Is it easier to tell what word it spells looking at the top half of a word's letters, or the bottom half? Now look at the two words again. One is a serif typeface, and one is a sans serif typeface. Is one easier to read than the other? Why? Which gives you more clues?

Alignment

There are four ways to align type in a column: align left ("ragged right"), center, align right ("ragged left"), and justify (aligned on both column edges). With desktop publishing equipment, there is a decided advantage in justifying the type: you can fit more text into the same amount of space. Unfortunately, page layout application programs (and even some low-end professional typesetting systems) turn off the word spacing and letter spacing features when they are in the left, center or right justify modes.

Examples of alignment

Align left: There are four ways to align type in a column. Align left starts every line at the left, but leaves the right margin "ragged," or uneven.

Centered: There are four ways to align type in a column. Centered type puts the same amount of space on the left and right margins.

Align right: There are four ways to align type. Align right starts every line at the right, and leaves the left margin "ragged," or uneven.

Justified: Justified starts every line at the left, but instead of placing the white space at the end of the line, it spreads it out between the letters and words.

Leading

Leading (pronounced "ledding," as in a ton of lead) is the amount of white space between each line of type. The term came from the days not so long ago when type was cast in metal (yes, lead) lines. To improve readability, most printers would insert a 1-point sliver of lead between every line of type.

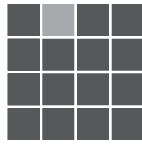
You vary the leading on your typewriter every time you change from single spacing to double spacing.

You vary the leading on your typewriter every time you change from single spacing to double spacing.

How PageMaker figures leading for you

Unless you are an experienced typographer, it's difficult to know what leading to use with different typefaces. That's why page design programs such as PageMaker, InDesign and Quark Xpress do it for you with a feature called "auto leading." To determine the proper leading for 10 point Times, for example, PageMaker multiplies the type size times 120 percent to arrive at the appropriate leading. Thus, on auto leading, Times has 12 leading. (This means there are 2 points of lead between each line of type.) Leading is usually calculated from the baseline of the first line to the baseline of the second line. It can also be measured from the top of the capital letter on one line to the top of the capital letter on the next line. Each has its advantages, depending upon your use of type in a publication.

Rule of thumb: A minimum of one point, maximum of two points of additional white leading provides the maximum advantage in increased readability.



legibility

Type classification

There are several ways to classify type. The most basic approach breaks all typefaces into two groups—those with brush strokes at the end of a letter as well as a thin/thick relationship (serif), and those without (sans serif).

Serif Sans Serif

Roman style is identified by a thin/thick relationship and serifs. In Oldstyle, there is not a big difference between the downstroke and cross stroke of a letter. In a Modern Roman, there is a strong bold downstroke and a light cross stroke.

Square serif type has a uniform width and squared-off, or block, serifs.

Monotonal faces have no serifs and a generally uniform width. Gothic faces have a thin/thick relationship but no serifs.

Written designs are based on hand-lettered forms. Script letters do not connect, while cursive letters do.

Text is Gutenberg's original typeface

Stylistic/Novelty/Ornamental designs are distinct, decorative, eccentric.

The second way of classifying type is essentially by design — Roman, Square Serif, Monotonal, Written and Novelty. (These samples are all set in 18 pt. type.)

Roman

Oldstyle (subtle thin/thick relationship, slanted counter, slanted serif):

Berkeley

Palatino

Times (transitional)

Modern (exaggerated thin/thick relationship, no slant on counter, serifs):

New Century Schoolbook

Bodoni Bold

Square serif (no thin/thick relationship, but slab serifs):

Lubalin Graph

American Typewriter

Monotonal (no thin/thick relationship, no serifs):

Sans serif:

Helvetica

Avante Garde

Gothic:

Optima

Written

Script:

Nuptial Script

Cursive:

Fresh Script

Text/Black Letter

Old English Text

Stylistic/Novelty/Ornamental:

TOOLBOX

MadZineWhip

FAJITA MILD

Some typographers contend that the Helvetica lowercase letter "a" actually has serifs, and that the "true" sans serif "a" should look like the one in Avante Garde. What do you think?

How do you classify Optima? It has a thin/thick relationship, but stops short of adding serifs (unless you believe the "a" is a serif). That's why designers created the "Gothic" category.

Script basically looks like hand-drawn letters. Sure, all typefaces start out as hand-drawn letters, but these retain their Humanist appearance.

Cursive looks hand-drawn, but the letters are connected.

Whatever you call them, these typefaces have Personality with a capital P. They are the life of the party. They get tiring very quickly. A little goes a long way, so use them sparingly when your design needs a little zing. They often look good shaded, colored, or distorted.



Families of type

Each of the major styles of type is further divided into a number of “families.” Each family of type is composed of individual members which are available in several close but distinct styles. Standard style variations to the Roman (or “regular”) typeface include *italic* (or oblique), **bold**, **bold italic** (or oblique), and sometimes condensed (narrow) and expanded (wide). All of the variations in a given family are available in all point sizes, although some are better than others for specific uses. Let’s take the Helvetica family, for example. (The numbers, by the way, are quick shortcuts you can use to quickly find the typeface you want to use.) Here are a few of the individual members which make up the Helvetica family:

A few individual members of the Helvetica family

WEIGHTS

35 Helvetica Thin
 45 Helvetica Light
 55 Helvetica Roman
 65 Helvetica Medium
 75 Helvetica Bold
 85 Helvetica Heavy
 95 Helvetica Black

STYLES

36 Helvetica Thin Italic
 46 Helvetica Light Italic
 Helvetica Condensed
Helvetica Condensed Black Oblique
Helvetica Compressed
 Helvetica Ultra Compressed

Typography advice

When you want to achieve contrast, which is important in design, choose Helvetica Light and Helvetica Black, for example. When using type, it is best to keep with a given family of type, using variations in style and weight to achieve the desired look. For contrast, use a complimentary typeface from another style category. For example, some publication designers use italic or oblique styles to indicate a human interest story, and bold headlines for news. What you use will depend on the paper quality and personality you want your publication to project. If there are bold photos or graphics on the page, make sure the style and size of type you choose do not get lost on the page.

Visual emphasis

Use Italic, Bold and Bold Italic for visual emphasis only. There are specific rules on when to use italic type and they vary depending upon whether you are publishing a newspaper, magazine or book. A good stylebook should clearly address the use of italic type. Italic, Bold and Bold Italic styles are more difficult to read than Roman type (also called “Book,” “Text,” “Regular” or “Normal”), especially when used in large blocks. Italic, Bold and Bold Italic should be used judiciously. Compare the following examples set in 9 point Giovanni Book:

Body text styles and their legibility

A set of woodcut illustrations made in Venice for Colonna’s *Hypnerotomachia Poliphili*, and printed by Aldus Manutius in 1499, succeeds in epitomizing the harmony between type and decorative illustration.

A set of woodcut illustrations made in Venice for Colonna’s Hypnerotomachia Poliphili, and printed by Aldus Manutius in 1499, succeeds in epitomizing the harmony between type and decorative illustration.

A set of woodcut illustrations made in Venice for Colonna’s Hypnerotomachia Poliphili, and printed by Aldus Manutius in 1499, succeeds in epitomizing the harmony between type and decorative illustration.

A set of woodcut illustrations made in Venice for Colonna’s Hypnerotomachia Poliphili, and printed by Aldus Manutius in 1499, succeeds in epitomizing the harmony between type and decorative illustration.

Things to avoid

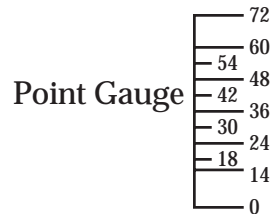
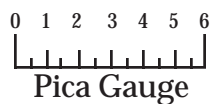
There are a few more things to avoid: Even though they are on your type menu, never ever use the *Outline*, *Shadow* or *Underline* styles. Only use a typeface that has already been designed with an outline or shadow. Don’t underline type. Underlining a title told the printer to set it in italic type. Set it in italics yourself if it’s a title. Check your stylebook for other uses of italic. Don’t use underlining for emphasis, either. It’s tacky, and there are so many other great ways to emphasize words. For visual applications, using another weight or style works. For writing, put your key words at the beginning or end of your sentences. Rather than clicking the style boxes in the control palette, select the desired typeface, such as Helvetica Italic for example, from the font menu.

Fonts families and their members

Almost every computer these days comes with a good range of classic typefaces in PostScript or TrueType font description languages. By classic I mean they are the workhorses of the type industry. Certain styles are better for books while others are better for narrow newspaper columns. Each family of type has different members (or styles), such as *Italic* (slanted), **Bold** (darkened) **Bold Italic**, *Light* (lightened), *Condensed*, *Expanded*, *Outline* or *Shadow*. They include:

- Avante Garde/*Italic*/**Bold**/**Bold Italic**
- Bookman/*Italic*/**Bold**/**Bold Italic**
- Helvetica/*Italic*/**Bold**/**Bold Italic**
- Helvetica Narrow/*Italic*/**Bold**/**Bold Italic**
- New Century Schoolbook/*Italic*/**Bold**/**Bold Italic**
- Palatino/*Italic*/**Bold**/**Bold Italic**
- Times/*Italic*/**Bold**/**Bold Italic**
- Zapf Chancery
- Zapf Dingbats ■◆✓*☞

Type size gauges

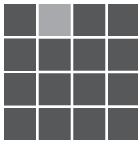


Spacing standards

PageMaker allows you to adjust letterspacing and word spacing. For the best readability, the following settings are recommended when you are using PostScript typefaces:

Paragraph Spacing Attributes

Word space:		Letter space:		OK
Minimum	75 %	Minimum	-15 %	Cancel
Desired	100 %	Desired	0 %	Reset
Maximum	125 %	Maximum	15 %	
Pair kerning: <input checked="" type="checkbox"/> Auto above 12 points				
Leading method:		Autoleading:		
<input checked="" type="radio"/> Proportional <input type="radio"/> Top of caps <input type="radio"/> Baseline		110 % of point size		



Tracking



On the previous page you learned how to adjust the space between words and the space between letters. Tracking applies word and letter spacing uniformly to the entire line of type. We already know that people read the shapes of words, not their individual letters. The next step is to tighten the space between letters to help make the words even more recognizable. Type looks best when tracking is set on *Normal*, *Tight*, or *Very Tight*. Avoid *No Track*, *Very Loose* and *Loose*. It makes the word more difficult to recognize. If you want to space out your letters, there are other ways to do it that provide you with more control. It takes some getting used to, but once you start studying readability, you appreciate a designer who makes reading text easy. Let's take a look. The word *hamburger* is frequently used to set sample type because it showcases all the parts of an alphabet. Here's what happens when we apply tracking to each line.

No Track	Hamburger	} Too much space between letters; look at the space between the letters <i>m</i> and <i>b</i> .
Very Loose	Hamburger	
Loose	Hamburger	
Normal	Hamburger	} Notice how the first three samples are more difficult to read than the bottom one? Clarifying the shape of the word makes a significant difference in readability.
Tight	Hamburger	
Very Tight	Hamburger	

Kerning

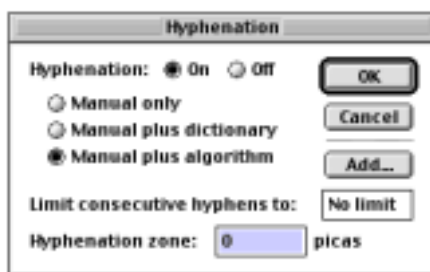
Certain letter pairs, depending upon how they are drawn, need additional adjustment just between those two letters. Modern typefaces usually have "kerning pair" hints built in, but some still need additional adjustments, especially in larger type sizes. To illustrate the point, let's use the word WAVE in all capital letters. The left one is not kerned, and there is more white space between the *W*, *A* and *V* than there should be. To correct that problem, we have to tuck one letter into another:



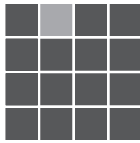
Notice how the letters *W*, *A* and *V* actually overlap each other in the kerned sample? Remember to make your final decision about kerning from a printed copy, not from the monitor screen.

Hyphenation

If you are setting your type justified, then your word and letterspacing standards and tracking choices will generally work out well. Every now and again, however, any typesetting program will run into a situation where it leaves too much white space between words. Like kerning, you have to tell it what to do. Especially if you are using ragged right type, you should set your Hyphenation zone at zero. Here's



why: The hyphenation algorithm looks for the first place to break the word once you are within the hyphenation zone, which by default is set to 3 picas. By setting it to zero, you are telling it to go all the way to the end of the line before it hyphenates a word. If it can't do that, it will do the next closest place from the end. In terms of overall type color, you will achieve a more uniform appearance.



Typography project

Find an example of each of the following uses of type in a professional magazine or newspaper. After cutting it out, mount and label it as directed. Include the source of each sample.

This project is due on _____

Body Type

Cut and paste a paragraph of each one of the following styles of body type:

- A. Align left
- B. Align center
- C. Align right
- D. Justify
- E. Serif
- F. Sans serif
- G. Italic
- H. Bold
- I. Roman (regular)

A.

B.

C.

D.

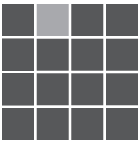
E.

F.

G.

H.

I.



Type classifications

IV. Cut out an example of each type classification and paste it on this sheet of paper:

A. Oldstyle Roman

B. Modern Roman

C. Square serif

D. Monotonal sans serif

E. Monotonal gothic

F. Written script

G. Written cursive

H. Stylistic/Novelty

I. Serif

J. Sans serif

K. Large x-height

L. Small x-height

For more information on typography, check out the following web sites:

A.

[Dashed box for type classification A]

B.

[Dashed box for type classification B]

C.

[Dashed box for type classification C]

D.

[Dashed box for type classification D]

E.

[Dashed box for type classification E]

F.

[Dashed box for type classification F]

G.

[Dashed box for type classification G]

H.

[Dashed box for type classification H]

I.

[Dashed box for type classification I]

J.

[Dashed box for type classification J]

K.

[Dashed box for type classification K]

L.

[Dashed box for type classification L]

Want to know more about type? For an excellent introduction to type, visit Dr. Linda Lohr's web site at Univeristy of Northern Colorado: <http://www.coe.unco.edu/Typography/>

The number of characters per pica for popular PostScript® body typefaces

To determine how long a story will be when it is typeset, use an averaging system based on the number of characters per pica for specific typeface sizes. There are 2.81 characters per pica in 10 point Times Roman, for example.

The following chart will help you easily determine how many inches long your copy will be using standard column widths. If you will not be placing text in a standard column width (3, 4, 5 or 6 columns with 1 pica margins), you will need to know how many picas wide the column will be to determine the story length.

Here is how we came up with the five column (11 picas) count :

- The column is 11 picas wide. For Times 10 point, there are 2.81 characters per pica. Multiply the characters per pica times the column width (in picas). The result is the number of characters in one typeset line of 10 pt. text: $2.81 \times 11 = 31$
- For Times 10 point, there are exactly 6 lines to every inch. Multiply the 31 characters per line by 6 lines to the inch. The result is the number of characters in 1 typeset inch of 10 pt. text: $31 \times 6 = 186$
- There are 186 characters (on the average) in every typeset inch of text.

To determine the length of your stories, you need to know how many characters are in your copy. To find out, look at the Tools menu on your Word screen. Select "Word Count."

Want to use a different column width? Using our formula above and the data on the next page, you can accurately calculate how long your copy will be when typeset. Divide the number of characters in the document by the number of characters in every typeset inch of text (186). The answer is the number of inches long your story will be, accurate to the half-inch.

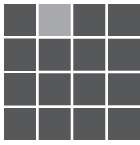
Below are some conversion tables which are easy to use and which will give you story lengths quickly, as long as you are using Times 10 pt. with auto (or 12) leading.

How to figure story lengths

TYPEFACE	6 pt.	8 pt.	9 pt.	10 pt.	11 pt.	12 pt.
ITC American Typewriter® Med.	3.80	3.00	2.63	2.40	2.23	2.05
ITC Avant Garde Gothic® Med.	3.63	2.83	2.63	2.33	2.16	1.96
Bookman	4.20	3.30	2.96	2.66	2.43	2.26
Century Schoolbook	3.96	3.11	2.76	2.50	2.33	2.16
ITC Friz Quadrata 4.11	3.21	2.90	2.56	2.40	2.23	
Goudy Old Style 4.51	3.50	3.16	2.86	2.63	2.43	
Helvetica Light 4.06	3.16	2.83	2.56	2.36	2.20	
Helvetica	3.86	3.03	2.70	2.46	2.28	2.10
ITC Lubalin Graph® Book	3.80	3.00	2.63	2.40	2.23	2.05
Melior® 3.90	3.10	2.73	2.46	2.30	2.13	
Optima® 4.20	3.30	2.96	2.66	2.43	2.26	
Palatino®	3.96	3.11	2.76	2.50	2.33	2.16
ITC Souvenir® Medium	4.11	3.21	2.90	2.56	2.40	2.23
Times Roman® 4.06	3.16	2.83	2.81	2.36	2.20	

*These counts are approximate. They have been calculated from alphabet conversion tables published by Allied Linotype and International Typeface Corporation. They should be accurate to the nearest half-inch.

® Indicates a registered trademark of Allied Corporation or its licensees. The initials ITC when accompanied by a ® specify either a registered trademark or a trademark of the International Typeface Corporation. PostScript® is a registered trademark of Adobe Systems, Inc.



Characters counts to column inches chart

Divide the total characters in the story by the number of characters per inch to determine story length:

Body Text	6 columns/ 9 picas wide—150 characters per inch
	5 columns/11 picas wide—186 characters per inch
	4 columns/14 picas wide—234 characters per inch
	3 columns/19 picas wide—318 characters per inch
Briefs Text	2 column box/17 picas wide—387 characters per inch

Character counts to inches

	6 column	5 column	4 column	3 column
1"	150	186	234	318
2"	300	372	468	636
3"	450	558	702	954
4"	600	744	936	1272
5"	750	930	1170	1590
6"	900	1116	1404	1908
7"	1050	1302	1638	2226
8"	1200	1488	1872	2544
9"	1350	1674	2106	2862
10"	1500	1860	2340	3180
11"	1650	2046	2574	3498
12"	1800	2232	2808	3816
13"	1950	2418	3042	4134
14"	2100	2604	3276	4452
15"	2250	2790	3510	4770
16"	2400	2976	3744	5088
17"	2550	3162	3978	5406
18"	2700	3348	4212	5724
19"	2850	3534	4446	6042
20"	3000	3720	4680	6360