

Ten common mistakes in the typesetting of technical documents

The widespread use of word processors has permitted – even forced – many technical authors to typeset their own work. But most technical authors have little or no familiarity with typesetting principles. This note catalogues what I consider to be the ten most common mistakes, and provides my suggested solutions.

Curiously, in the original paper describing the technical foundation of Google, the authors neglected to put their names on the paper! See PAGE, LARRY, and SERGEY BRIN, R. MOTWANI, and T. WINOGRAD, *The PageRank Citation Ranking: Bringing Order to the Web*, Stanford Digital Library Technologies Project Publication 1999-66 [accessed 2008-01-23].

- 1 *Failure clearly identify title, author, and pages:* Technical authors often fail to clearly identify their work. You probably want your reader to be certain who wrote the work, to be able to cite it, to discern whether he or she has the most recent version, and to be confident that the document is complete. So, provide a title, your name, and a version or date on the first page. Number your pages. Either place a notation such as *1 of 4* on the first page, or use a typographical device (such as ■) as the final character of the work.
- 2 *Lack of consideration for line length and type size:* A 66 character line is widely regarded as ideal for readability. With 12-point Courier type – so-called Pica, with ten characters per inch – 66 characters make a 6.6-inch line. Set on an 8.5-inch page width, this leaves a reasonable margin of about an inch on each side. But 12-point type, especially Courier, is too large for all but very unusual cases. Ten point Palatino is suitable for technical documents; however, a typical 6.6-inch line has 100 characters, far too many for sustained reading. To use 10-point Palatino, a line length of about $4 \frac{1}{8}$ inches is ideal. If you want to use a single column, consider using 11-point type in a column about 5 inches wide: Leave wide margins. If your document is almost wholly text, consider using 9-point type in a layout with two 3-inch columns.
- 3 *Thoughtless use of monospace fonts:* Typefaces such as Courier were designed to accommodate the mechanical constraints of typewriters: Mechanical constraints force the letter *i* to have the same *set width* as the letter *W*. Use Courier, or another monospace font, if you want your document to look like it was produced on a typewriter. However, if you prefer your document to appear attractive and permanent, choose a typeface that has *proportional* spacing.

- 4 *Gigantic heads*: It is obviously necessary to distinguish headings (or *heads*) from body text. Normally, a head is placed in the margin, or set off by spacing. In these circumstances, it is rarely necessary to set the head in a size larger than the body type, and rarely necessary to use a different typeface. If you are unfamiliar with typesetting, simply set your heads in boldface type at the same size as the body face. If you must use a larger size, don't use boldface.
- 5 *Unightly indication of emphasis*: Underlining is strictly for typewriters. Modern computers have italics: Use them for emphasis. (To use boldface would make your page look blotchy.) Use quotation marks only for their intended purpose: quotations. To use them for emphasis is disruptive to smooth reading of your text.
- 6 *Inappropriate use of typewriter conventions*: Follow the period at the end of a sentence by a single space, not two. On a typewriter, you are forced to set two hyphens in place of a dash, but in typeset work you can use an en dash – like this – surrounded by normal (word) spaces. Modern word processors and page layout programs allow you to use typographic characters. Use the *straight* single and double quotes ' and " only to denote minutes, seconds, feet, and inches; and then only if there is insufficient space to spell out the unit. For an apostrophe, use the proper typographical character ('); for quotations, use typographer's "curly" quotes. (These may be accessible through your word processor's *smart quotes* feature.)
- 7 *Lack of control of line breaks*: Modern word processors allow you to control line breaks and hyphenation. Use a *nonbreaking space* to prevent adjacent elements – such as a numerical quantity and its associated unit – from being separated by a line or page break. Use a *nonbreaking hyphen* to avoid the elements of a compound modifier, such as 35-millimeter, from being broken at a line-end.
- 8 *Failure to clearly distinguish paragraphs*: A surprising number of technical authors fail to clearly separate their paragraphs, thereby making their work hard to read. Choose one of two methods to identify paragraphs: Either indent the first line of every paragraph, or use no indentation and establish paragraph formatting such that paragraphs are separated by the equivalent of a blank line.
- 9 *Careless setting of fractions*: Set a fraction using a superscript for the numerator, a subscript for the denominator, and *fraction slash* as a separator. (On a Macintosh, fraction slash is Shift-Option-1.)
- 10 *Poorly oriented figures*: If your document includes figures oriented differently from the text, your reader will have to rotate your document to read them. You should ensure that he or she has to turn the document only once per page, and always in the same direction. I suggest that you arrange your layout so that the reader rotates the body text clockwise 90° to view a figure. In other words, when you are viewing the text in its natural orientation, place the top of a rotated figure to the left. ■

I find it appalling that after a quarter of a century the "factory settings" of Microsoft Word still slavishly emulate a typewriter. In particular, no paragraph separation is built-in. The new user finds it very difficult to override this behaviour.