A Cold Eye

Editor's Note: In this column we present critical commentary on the institutions, practices, and controversies of the graphic design field. We invite reader response to the opinions contained herein.

What Is the Point?

By Andrew Boag

North American graphic designers and typographers need to be acquainted—and often work concurrently—with at least two different measuring systems: the Anglo-American point and the inch. (The Anglo-American point is loosely based on the inch, but not an exact subdivision. The point adopted in desktop publishing *is* an exact subdivision of the inch.) Graphic designers and typographers with remotely international connections also need to be familiar with the millimeter, and some may well have been confused by another typographic point still in use throughout most of Europe: the Didot point. In this opening paragraph, I have mentioned five different measuring systems used by graphic and typographic designers throughout the world: All designers must work with at least two; and in some countries, under certain circumstances, designers work concurrently with four. More significant, type users employ measuring systems based on an almost completely redundant concept: the metal type body. Can anybody tell me, what is the point?

The historical background to this sorry state of affairs can be summarized with reference to four key dates.

The first is 1737. Pierre Simon Fournier had set up his own foundry in Paris in 1736 and the next year established a rational system of type body sizes. Before this, there was no guarantee that types from two separate founders would have a common absolute size. Using Fournier's system, founders cast all types to sizes that were multiples of a basic unit, which Fournier called "the typographic point." No doubt in order to ensure that his resulting sizes differed as little as possible from those in common use, however, Fournier conceived his point as a subdivision of an arbitrary inch. It has therefore never been easy to determine the exact dimension of Fournier's point, but it was around 0.35mm.

The second key date is c. 1783. At this time, François-Ambroise Didot established a type foundry in Paris. He related the point to the then official French measure, the *pied de roi*. This made type and paper measurement compatible: but not for long. By 1799, French Revolutionary reform resulted in the adoption of the metric system. (François-Ambroise Didot's son, Firmin, later attempted to correct this situation by devising a scale of type body sizes based on the metric system, but the project was abandoned in 1815.) The Didot point was later fixed in Europe at 0.376mm.

The third date is 1872. The type foundry of Marder, Luse & Co. established the "American system of interchangeable bodies" with 6 picas to the inch (i.e., 1 point equal to 1/72-inch)—an idea suggested by Nelson Crocker Hawks, their agent in San Francisco. Successful though this was, the U.S. Typefounders' Association decided in 1886 that the official pica should measure 0.166044 inch, making the point 1/72.27-inch, or 0.3514598mm. This so-called Anglo-American point is still widely used by printers, typographers, and graphic designers in North America and the United Kingdom.

But its supremacy has been eclipsed by the DTP point, which brings me to the fourth key date, 1984, and the introduction of the Apple Macintosh and Adobe's PostScript page description language. Adobe adopted the original Marder, Luse point (1/72-inch, or 0.3527785mm) as the basic default unit of measurement (Fig. 1).

But by this time, many attempts had been made to metricate typographic measurement and to change the way in which type is measured in line with technological change. Europeans had even settled their differences as to whether to establish a metric "point," or introduce a scale of sizes based solely on divisions of the millimeter: A 1972 British Standard (*BS 4786 Specification for metric measurement*) recommended a preferred range of sizes (1.75mm, 2.0mm, 2.25mm, etc.) with interline spacing (now almost exclusively referred to, inaccurately, as "leading") measured in multiples of 0.25mm. (This standard was withdrawn around 1990.) The German Federal Republic had laid down an order that the use of the typographic point after 1977 would constitute a punishable offense, and the European Commission set 1978 as the date by which all measurements conflicting with the metric system should be abolished.

Even in the U.S., a survey conducted in 1971 by the Institute for Social Research proved that the more people knew about the metric system, the more they liked it, and the more they would be prepared to adopt it. In response to a Graphic Arts Research Center survey, 60 per cent of Ameri-

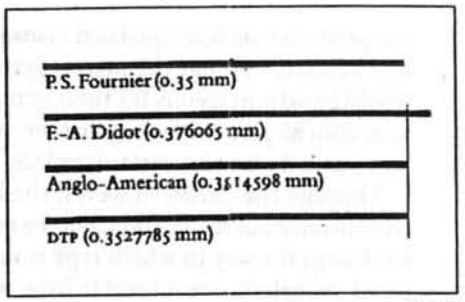

Fig. 1

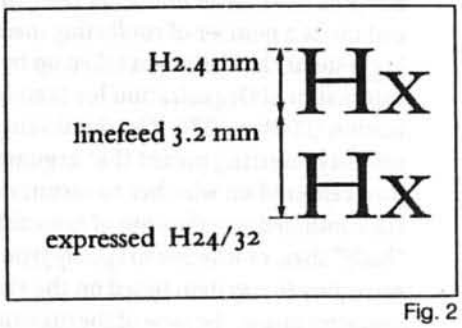

Fig. 2

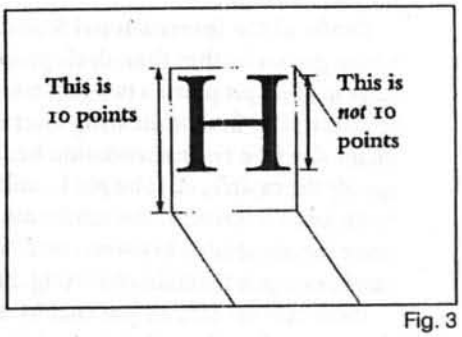

Fig. 3

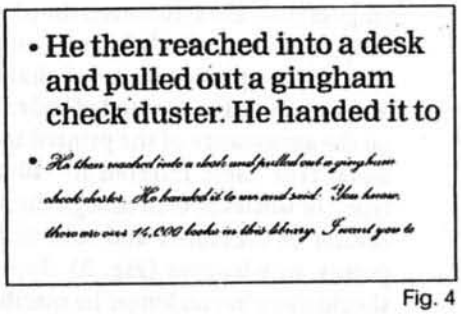

Fig. 4

can print- and publishing-related managers and officials felt that the metric system would be advantageous for their companies, with 85 per cent feeling that metrication was in the best interests of the U.S.*

Through the 1970s, however, the key issue became not metrication, but the need to change the way in which type is measured, though this went hand in hand with the notion that the metric system must be adopted in order to eradicate the continued use of a number of conflicting measuring systems. The issue was taken up by the International Organization for Standardization (ISO) in 1975. The dominance of phototypesetting meant that arguments now centered on whether to recommend the continued specification of nonexistent "body" sizes, or whether to specify type size according to a system based on the visible character image, the view of the majority of the ISO contributors.

Drafts of the International Standard, which got no further than draft proposal stage in 1978, proposed a two-part size designation: the first indicating character image size (the recommendation being to specify the capital-, or H-height in millimeters); and the second, the minimum distance recommended between consecutive baselines (again in millimeters) (Fig. 2).

ISO's case for reform was that in metal the range of preferred sizes *had* to be a range of body sizes. However, the physical body occurs exclusively in lead composition, while a photocomposed character image is not tied to any kind of body. Based on the appearance of the printed image, metal type users referred to "10-point type," or whatever, even though the image cannot be measured and said to *be* 10 points, or whatever (Fig. 3). Type size should therefore no longer be specified in terms of a dimension that does not indicate the real size of type.** This argument still stands.

I would suggest that the fact that the novice now has access to professional typefaces and typographic software provides further fuel to the argument for reform.

The professional type user understands our arcane method of measurement and understands, for example, the varying relationship between character image size and type "body" size. The professional needs only to learn how to instruct a computer to carry out his or her requirements. The novice, on the other hand, is severely disadvantaged. The novice is expected to somehow understand what a point is, appreciate what type body size means in relation to character image size, and then learn which size to use in a particular circumstance, understand what "leading" is, appreciate which distance to set for "leading," and then *additionally* learn how to instruct a computer to carry out his or her requirements.

To reinforce my argument, just think about the novice's day-to-day experience. First, the novice does not know what the value of a point is. Second, he or she does not know how the point is applied to the measurement of typographic characters. The novice has no understanding of the nonexistent body; no *need* to understand it because it is now redundant; and no *desire* to understand it because its relevance cannot easily be demonstrated. Third, the novice has no understanding of the relationship between x-height and capital-height, and how these in turn relate to how type is measured.

It is understandable, therefore, that a novice might assume that sticking to one formula (which may incorporate the default parameters) will be his or her safest option for obtaining consistent results. In using a range of typefaces, this of course will not provide consistent results (as shown in Fig. 4, in which Nimrod and Palace Script are set with the same type size and leading values), which can only lead to further confusion.

I would maintain that contemporary arguments, coupled with those arguments put forward in the 1970s by ISO, suggest conclusively that there is now an even greater need for the introduction of a character-image-based system of typographic measurement, expressed in recognizable units. The millimeter is widely recognized as the base unit of the most coherent measuring system available, and the metric system has been adopted by over 88 per cent of the world's population. Adoption of the metric system would bring compatibility between typographic and paper measurement for Europeans and much of the rest of the world (except North America). Millimetric reform is, however, worthless unless we additionally reform the way in which type is measured; and given the flexibility of contemporary computer-driven technology, the actual units of measurement adopted are largely immaterial.

Some professionals react strongly against the demise of the body-based point system. However, software engineers must be capable of developing systems that can handle both body-based and character-image-based specification. Nevertheless, I consider it our responsibility as professionals to adapt to technological change, and to adapt to the changing demands of the growing community of type users. Why should we sit back while the novice tries to make sense of a system that cannot be seen to make any sense? The continued use of a wide range of measuring systems and the measurement of now nonexistent bodies must be detrimental to the advancement of a professional industry and discipline. This is surely the spirit in which Firmin Didot himself attempted to establish a metric typographic measurement system 180 years ago.

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*C.A. Cameron, *Going Metric with the U.S. Printing Industry*