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A TEST PLATE FOR PROPORTIONAL SPACING TYPEWRITER EXAMINATION

ORDWAY HILTON

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The problem of identifying typewriting has become somewhat more complicated through the introduction by the International Business Machines Corporation of a proportional spacing typewriter. This machine, marketed as their Executive Model, prepares typewriting which closely resembles printing. In contrast to the conventional machine on which each letter occupies the same horizontal space, for example $\frac{1}{10}$ of an inch for pica type, the proportional spacing machine's letters space in a similar way to printed type. For example, the *i* takes up less space than the *a*, and lower case letters are generally narrower than capitals.

For identification questions involving proportional spacing typewriting there is a need for ruled test plates to handle two problems. One involves malalignment, that is letters printing too far to the right or left or above or below the base line. A trained examiner can often spot improperly aligned letters in pica typewriting without the aid of a test plate, but in proportional spacing typewriting with the tolerances much smaller, this is not so easy. The second problem concerns a document typewritten at two different times, for example one in which a paragraph has been added after execution. This paper will describe a suitable test plate.

Type Spacing Factors. I.B.M. uses three basic units for proportional spacing typewriting— $\frac{1}{32}$, $\frac{1}{36}$, or $\frac{1}{45}$ of an inch. The $\frac{1}{32}$ inch unit is the most common.¹ Narrow lower case type, usually, *i*, *l*, *t*, *f*, and *j*, take up two units, the *w*, four, the *m*, five, and the balance, three. Most capitals occupy four spaces with the *M* and *W* occupying five, *I*, two, *J* and *S* three.² Thus, it becomes necessary to design a plate which will provide for these variable widths.

With certain of the I.B.M. type fonts, the machine is not designed to space six

¹ Eight fonts use $\frac{1}{32}$ inch: Bold Face #1, Bold Face Italics, Documentary, Modern, Secretarial, Arcadia, Directory, and Testimonial; five, $\frac{1}{36}$ inch: Bold Face #2, Mid-Century, Copper Plate, Registry, and Heritage; two, $\frac{1}{45}$ inch: Charter and Text. The most popular font of these is Modern $\frac{1}{32}$ inch.

² With some letters the units used vary between fonts. Spacings listed in this text apply to at least three popular fonts, Modern, Secretarial, and Documentary. I.B.M.'s booklet, "How to Make a Perfect Impression" (1954), page 21, gives data on the others.

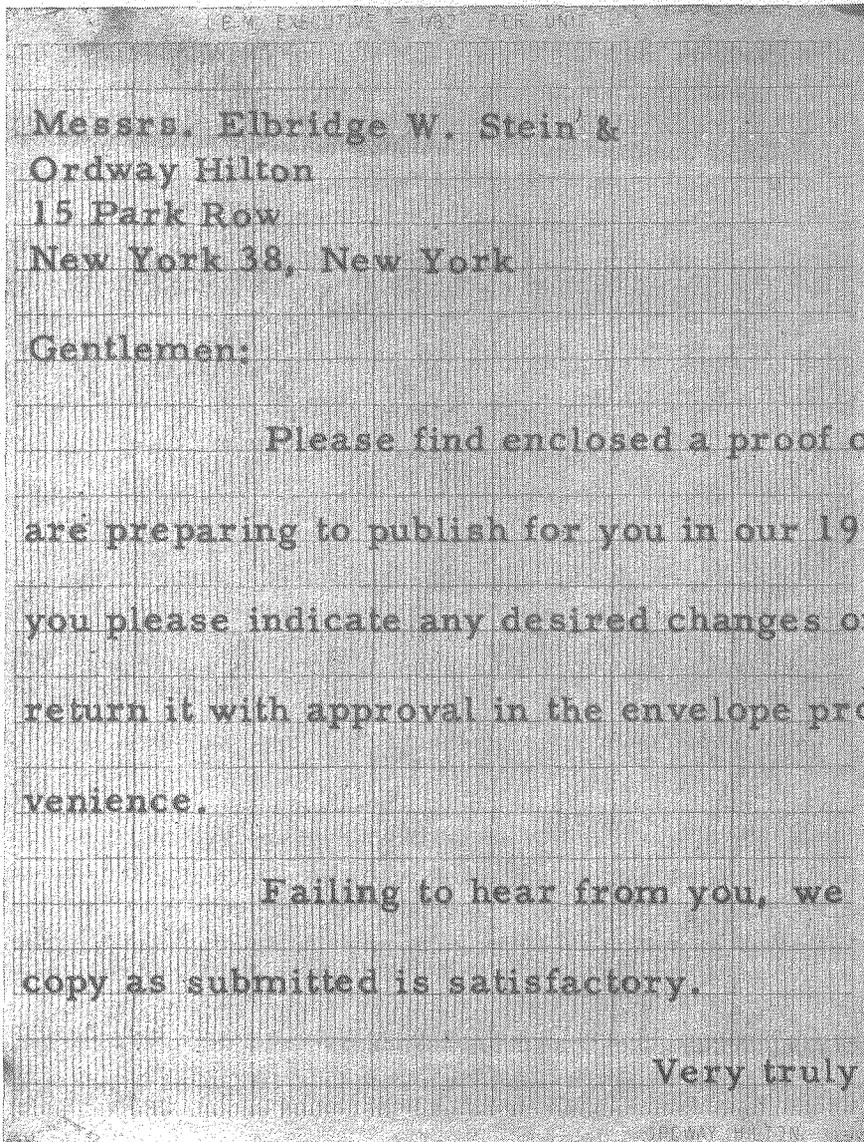


Figure 1

The inside address of a form letter was added at a subsequent typing. The test plate shows that the typewriting in the address runs downhill slightly compared to the body of the letter.

In adjusting the test plate the letters, *i*, *l*, and *n*, were used as a reference point for proper alignment. Examination of the *o*'s under the plate reveals that this letter is maligned, slightly off to the right, and that the *e* sometimes prints slightly to the left of the proper alignment and sometimes in proper position.

lines to the inch, but rather uses a slightly wider spacing of 5.28 lines per inch.³ This factor should be considered as well.

The Test Plate. The most popular proportional spacing type font is Modern built on units of $\frac{1}{32}$ inch and line spacing of 5.28 lines per inch. Thus, a test plate with vertical rulings every $\frac{1}{32}$ inch and horizontal rulings every 0.19 inch should be useful in a large percent of the problems encountered. To facilitate handling of the vertical lines and to group them more readily a slightly heavier ruling was used every half inch. A plate so designed was ruled on glass by Mr. Lyman Nichols of Fort Collins, Colorado.

Evaluation. This plate has been tested on several problems. It was feared that the great number of horizontal rulings might cause some confusion and difficulty of use, but this did not prove to be the case. On the other hand, with it letters slightly out of alignment either to the right or left were clearly revealed.

The second problem involves determining whether some typewriting of a document was prepared at a different time than the balance of the material. The horizontal rulings are handled in exactly the same manner as with test plates for conventional typewriting. In this way lack of parallelism or variation in line spacing can be disclosed. (See Figure 1). The vertical rulings reveal the relative vertical alignment of letters in different sections of the paper. Its use in this class of problem may be the only means of disclosing the facts.

Shortcomings of the test plate are primarily those that are inherent to the I.B.M. manufacturing process. Since they have not standardized all of their proportional spacing type of one escapement and have not standardized on a single line spacing for all fonts, the same plate cannot be used in all problems. For example, in one case Documentary type was encountered. The vertical rulings of this plate could be used, but since this particular machine spaces six lines to an inch rather than 5.28, a second plate would be needed to handle line spacing questions. Similar need is encountered, though, with pica and elite type. However, because of the widespread use of Modern type with recommended line spacing, this test plate in its present form has a great deal of utility in the majority of proportional spacing problems. Based upon the use to date, its design appears to be satisfactory.

* Published data give recommended line spacing as $5\frac{1}{4}$ lines per inch, but the actual measurement given this writer by a representative of the Sales Engineering Division, IBM, is 5.28 lines per inch. Many different line spacings can be obtained upon request of the customer so that this factor is not constant for all machines.