EXAMINATION OF BLOCK CAPITAL WRITINGS WITH THE VIEW TO FIX
AUTHORSHIP AND EXPERT OPINION THEREON

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ABSTRACT
Whether a document examiner should express an opinion regarding authorship in case of block capital writing has been a matter of debate since the very origin of science. In this case there is a clear division among the experts of the discipline of whom some are in favour of rendering opinion and the rest strongly against it. The block capital writings, also called hand printing or pen printing, are basically the detached form of writings which are quite tough to examine as they display less variety of individual characters, which forms the basis of handwriting examination. In such cases, it becomes difficult for an expert to fix authorship on the basis of these block capital writings. This paper presents a number of considerations pertinent to the scientific identification of individuals through their hand printing. The manuscript clearly outlines what it requires to successfully examine this special class of documents and how such conscientious efforts smoothens the process of administration of justice.

KEYWORDS: Forensic; Document; Examination; Hand printing; Block capital; Pen printing

1. INTRODUCTION
Forensic document examiners usually encounter the questioned documents bearing text in the cursive writing, also called lowercase writing, which appears in more varieties as compared to hand printed capital writings. Hand printing is a disconnected form of writing in which the block capital letters are included. The letters in such form of writing are upright, separated and are usually made without serifs [1]. The question regarding the authorship of hand printing often arises in case of addressing packages, envelopes, official forms and applications. Block letters can also be encountered in anonymous letters, where the writer tries to hide his or her identity due to their criminal intends. This style of writing is frequently used in disguising and is quite effective if no sufficient specimen is available for comparison [2]. The document examiner sometimes shows reluctance in examining and giving conclusive opinion on the document written in block capital letters, as such writing shows less
individuality due to its detached nature. The letters in these writings are made individually so that their position within the word does not affect their appearance. The block letters can be classified into three different groups as shown in table 1.

<table>
<thead>
<tr>
<th>S. no.</th>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Letters made with straight vertical and horizontal lines</td>
<td>E, F, H, I, L, and T</td>
</tr>
<tr>
<td>2.</td>
<td>Letters containing angles</td>
<td>A, E, M, N, V, W, X, Y, and Z</td>
</tr>
</tbody>
</table>

It is true that, the document examiner stands in more advantageous position, if he has to deal with the cursive writings, but as the expert he should not confine himself to any single factor and should examine and scrutinize the various writing habits such as, speed, skill, movement, pen pressure etc. even in case of hand printing also [3-5]. He is therefore able to assess how characteristic are the features he finds in the writing he examines and this assists him in reaching a conclusion. It is believed that the hand printing is just like an ordinary script often controlled by the habit, which in turn provides useful means of identifying the particular writer [6]. Each writer bears a different style of hand printing. A conclusive opinion after careful examination of such writing is highly expected, leaving alone the degree of accuracy of the opinion as it can vary with the available expertise and suitability and adequacy of the standards for comparison. If the principles of examination are carefully followed and applied by a persevering enquirer, it is highly possible that a correct solution can be reached in the vast majority of investigations [7-8].

The purpose of this study is to find out the variations and individual writing characteristics in block capital letters with a view to fix their authorship. 50 handwriting samples containing block capital writing were collected from 50 different writers in order to find out the peculiar and individual writing characteristics and to determine whether a forensic document examiner should express an opinion on hand printed documents after a thorough examination and comparison.
2. Materials & Method

The samples of block capital writings were collected from 50 different writers. They were asked to write one paragraph, giving their personal details, in capital writing. The examination was carried out to determine the combination of both class and individual characteristics or habits present in each writing sample. The overall pictorial appearance, letter construction, internal proportion of each letter form, line quality, spacing between each letter of the word, relative sizes of the letters, height of each letter, arrangement of text, closeness of each letter with the copybook form were among some of the parameters examined.

During the course of examination, comparison and analysis of samples, bulk of focus was on the individual writing characteristics which includes – Formation of letters, Shape of letters, simplifications, their start and finish, relative location of the strokes forming the letters, direction and curvature of strokes, extent of retracing, formation of loops, its size, shape and inclination, slant of the diagonal, uniformity or irregularity of the height of the letters in words.

Knowledge of the forms of alphabets and how the characters are formed is essential while dealing with the handwriting examination and particularly when the written material is in block letters. Individuality and its significance is the central element for the identification of hand printing. By properly evaluating the significance of each feature based on its rarity or frequency of occurrence in writings combined with the class characteristics of the writing, the authorship can be established with accuracy and reliability.

3. Experiment & Observation

Each hand printed sample was examined individually to find its general and individual writing characteristics, writing habits of the writer and to determine the extent of deviation from the copy book form which formed the basis for fixing the authorship for writings in block letters. After that inter-sample comparison was performed to note the amount of variation observed in the samples obtained from different writers.

Let us consider one block capital writing of a writer (figure 1), which was thoroughly examined and each of its alphabet was compared with its standard book form.
Letter construction, relative size of each letter, ratio (height relationship), line quality, arrangement of text and internal consistency within each set of writings are some of the parameters which are taken into account. The general writing characteristics of the handwriting sample were recorded in form of observation chart as shown in Table 2.

<table>
<thead>
<tr>
<th>S. no.</th>
<th>Class Characteristics</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Line quality</td>
<td>Smooth and Uniform</td>
</tr>
<tr>
<td>2.</td>
<td>Movement</td>
<td>Finger + wrist</td>
</tr>
<tr>
<td>3.</td>
<td>Speed</td>
<td>Medium</td>
</tr>
<tr>
<td>4.</td>
<td>Alignment</td>
<td>Horizontal to slight upward</td>
</tr>
<tr>
<td>5.</td>
<td>Skill</td>
<td>Medium</td>
</tr>
<tr>
<td>6.</td>
<td>Slant</td>
<td>Vertical</td>
</tr>
<tr>
<td>7.</td>
<td>Size</td>
<td>Large</td>
</tr>
<tr>
<td>8.</td>
<td>Spacing</td>
<td>Normal</td>
</tr>
</tbody>
</table>

The sample reflected some individual writing habit of the writer which had some characteristic deviations from the actual book form. Some of the characteristic formations of the writer are displayed in figure 2 to 11.
Figure 2: Variation observed in formation of block letter “A” of the writer

Capital “A” of the writer

Book form of capital “A”

The writer is the kind of writing letter “A” in two pen operations. The add-inlet level of the book form is the right and the black area of the letter is curved insinuate with a small hook at the end of the right arm of the letter. The middle horizontal stroke of the letter is having a diagonal appearance with a curved start on the left and ending at a shorter distance.

Figure 3: Variation observed in formation of block letter “B” of the writer

Capital “B” of the writer

Book form of capital “B”

The writer constructs the letter “B” in two pen operations. The upper crossbar of the letter is moved in name, while the middle stroke is slightly upward from its normal position having a curved finish close to the finishing stroke of upper bar of the letter. The lower cross bar is detached from rest of the letter having diagonal appearance with a small hook at its starting.

Figure 4: Variation observed in formation of block letter “C” of the writer

Capital “C” of the writer

Book form of capital “C”

The letter “C” of the writer is having a short beginning with a small hook at the starting point of the letter. The terminal stroke of the letter is having a flat base.

Figure 5: Variation observed in formation of block letter “E” of the writer

Capital “E” of the writer

Book form of capital “E”

The writer constructs the letter “E” in four pen operations. The upper bar of the letter is moved in name, while the middle stroke is slightly upward from its normal position having a curved finish close to the finishing stroke of upper bar of the letter. The lower cross line is detached from rest of the letter having diagonal appearance with a small hook at its starting.

Figure 6: Variation observed in formation of block letter “G” of the writer

Capital “G” of the writer

Book form of capital “G”

The writer constructs the letter “G” in two pen operations with an extended beginning. The subsequent addition of the crossbar is seen. The tail of the terminal vertical stroke at the same level as the body part of the letter.

Figure 7: Variation observed in formation of block letter “I” of the writer

Capital “I” of the writer

Book form of capital “I”

The writer is in the habit of writing letter “I” in single pen operation. The upper cross bar of the letter returns back to form the middle horizontal line forming a closed loop at right side of the upper bar. The middle stroke is curved appearance. The tail stroke of the middle curve extends to form the lower cross bar forming a loop at its end. The lower cross bar is moved in name.
All the other 49 samples were also examined and reported in the similar manner as above.

4. Results

The thorough study and examination of all 50 samples, and the observations thus obtained, we came to an opinion that the document examiner should not feel reluctant in examining the handwriting samples containing block letters. It is possible for a document examiner to undertake the examination of such special class of document and to render opinion thereon. Hand printing contains the individuality, necessary to allow for an identification or elimination of a writer. The absence of elements such as connecting strokes does not prohibit a thorough analysis of other important characteristics.

By cumulative consideration and evaluation of both general and individual parameters of all the writing samples, it has been observed that a definite opinion regarding the authorship of block capital letters can be given provided sufficient and suitable standard material is made available.
5. Conclusion

After a careful and thorough examination of the hand printed samples, it has been concluded that if the principles of handwriting examination are carefully followed and applied by a persevering forensic document examiner, it is very much likely that he will be able to examine the document successfully and can give a definite opinion thereon provided he is made available with suitable and sufficient standard material for comparison. Class characteristics of hand printing play an important role in identification and elimination of a writer when such manuscript is in question. The presence of class characteristics cannot be solely used to fix the authorship of a writer, but can be used as a starting point in the examination. Furthermore, a sufficient number of individual habits must be common to the two sets of, standard and questioned, so that it becomes a virtual certainty. Similarity and dissimilarity is based on a combination of habits within the individual’s writing or hand printing. The hand lettering may stand alone as a means of identifying the writing of an individual. For framing a conclusion that a single writer prepared two sets of lettering, it is assured that all type of natural variations as well as individual habits of the disputed matter are also found in the known specimens. A document examiner must compare like with the like, which requires knowing what each letter or figure is. He must be aware of what variations in the formation of a letter can occur in the writings of same persons and which forms are common or less common or rare. Once the level of certainty is reached, then it can be safely concluded that the writings are by same writer.

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