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Obliterated Writing—An Unconventional Approach

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ABSTRACT: The document examiner is often faced with the problem of deciphering obliterated writings. Conventional techniques used in these examinations are reviewed. A case is discussed in which an unconventional method of approach was successfully used to decipher obliterations when customary methods failed. This method is fully explored.

KEYWORDS: questioned documents, impressions, inks

During the course of his or her professional activities, the document examiner is often presented with a piece of documentary evidence with the plea to "find out what the writing under the obliteration is." Since documents, papers, and records provide the foundation for the conduct of business in our society, the decipherment of an obliterated entry on a particular document can affect the disposition of large sums of money or property or perhaps assist in uncovering the trail of an illegal activity.

An obliterated writing is, therefore, any writing (which may also include printed and typewritten matter) in which the message or content thereof has been rendered undecipherable because of an obstruction by the physical application over that writing of some substance such as ink. The obliteration may occur through accident, chance, or during the normal course of business. Ink may be spilled on a piece of paper or the bank's cancelling stamp may be strategically placed directly on top of the suspected forged endorsement on the check. On the other hand, the obliteration may be the deliberate act of a person who has something to hide.

In the process of carrying out an illegal scheme involving fraud, embezzlement, or some other type of scam, the criminal occasionally finds himself implicated by documents involved in the questionable transactions. If he becomes aware that he is the subject of an investigation, he may attempt to alter, erase, or obliterate the offending entries. To render the incriminating writing unreadable, the culprit will often simply scratch through the writing with a writing instrument such as a ball-point or fiber-tipped pen.

When presented with a case involving obliterated writing, the document examiner will customarily try several approaches to the problem. Initially, a thorough visual examination is in order. This should be conducted using direct light, sidelighting (light directed at the page from a grazing or oblique angle) in an effort to observe indentations, and transmitted light to determine if sufficient contrast exists between the original writing and the obliterating substance to make out the message. Appropriate magnification will also be used.

If the original writing and the obliteration are of different colors, color filters can be used

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to "drop out" the obliteration [*1*] visually or photographically. For example, if a check endorsement in blue ink is obscured by a bank stamp of red ink, viewing the endorsement through a red filter will render the red ink of the stamp invisible, leaving the endorsement legible and unobstructed. The same effect can be produced photographically using filters.

Obliterating material may be removed from a page containing writing by the use of chemical reagents [*2*]. Methods involving chemicals generally cause alteration or some measure of destruction of the evidence. They should be used only after all avenues of nondestructive examination have proved fruitless, and with full knowledge of the possible consequences. The approach and choice of reagents are determined on a case-by-case basis depending on the nature of the original writing and the obliteration. The appropriate solvent or bleach must be applied gently, dissolving or bleaching out the obscuring material. The "white-out" or opaquing material used to correct typewriter mistakes is an example of a material that responds readily to a suitable solvent such as acetone.

The most effective method to date of examination for the decipherment of obliterated writing involves the use of infrared and ultraviolet radiation. The basis for this type of examination is the chemical differences in inks which may result in different reactions upon exposure to various segments of the electromagnetic spectrum. This phenomenon can be observed using an image conversion system [*3*] or can be revealed photographically [*4*]. When inks are exposed to electromagnetic radiation, any of four possible reactions may occur. The ink may reflect the energy and appear to lighten. It may absorb the energy and appear to darken. The ink may transmit the energy and thus become invisible or "drop-out." Finally, the energy may be converted to another wave length which appears as luminescence.

The hoped for result in this type of examination is that the obscuring substance in an obliteration will transmit the energy, becoming transparent and revealing the original writing, or that the original ink will luminesce and be differentiated from the obliterating medium sufficiently well so that it can be deciphered. Again, for this method to be effective, the inks must not only be of different chemical composition, but they must also react differently to the incident radiation.

The problem of restoring or deciphering obliterated writing arose in connection with an investigation involving the murder of an attorney in a large city. Before the murder, the prime suspect had called the office secretary and made an appointment to see the attorney. The first appointment was subsequently cancelled and a second appointment was made. The victim was killed at about the time of the second appointment. When the suspect called for the appointments, the secretary had entered the name used by the suspect into the appropriate pages of the lawyer's appointment book. Subsequently the attorney instructed his secretary to scratch out these entries in the appointment book.

With the killing of the lawyer, the obliterated name in the appointment book assumed considerable significance. The secretary was not positive in her recollection of the name she had written. The appointment book was submitted to the FBI Laboratory with the request that the writing under the obliteration be determined.

The secretary had done a very thorough job of obliteration (Fig. 1). The applicable conventional methods of treatment mentioned earlier were attempted. These included visual examination using appropriate lighting and magnification, but the original writing and the obscuring ink were both black. Both the pages bearing the obliteration and the underlying pages were inspected for indentations of value. The areas in question were scanned under ultraviolet and infrared radiation in an effort to differentiate the inks or drop out the obscuring ink. These techniques failed, leading to a suspicion that the original writing was very likely obliterated using the same writing instrument or ink as the underlying writing.

Visual and microscopic examination of the obscured areas revealed that the obliteration, while quite extensive, consisted of a series of regular, consistent, closely spaced, and overlapping oval loops. At various points under the obliterations, segments of the original writing could be seen with the strokes running at contrasting directions or angles to the pen lines made by the obliterating loops.

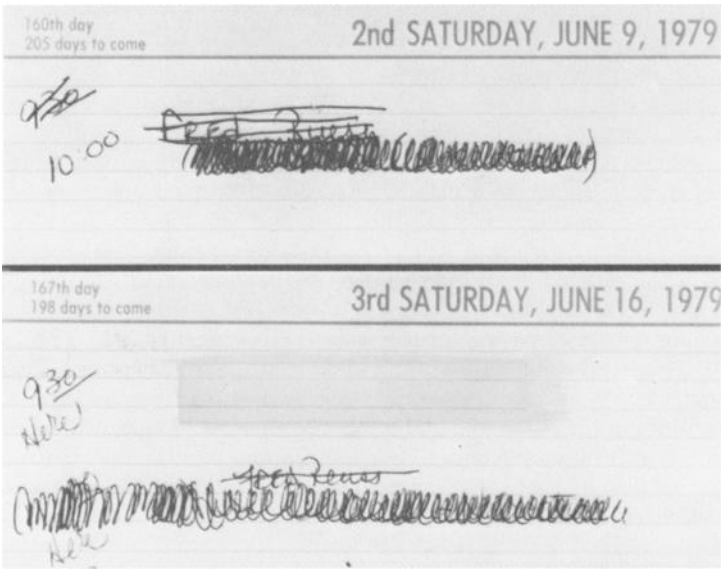

FIG. 1—*Obliterated name in the appointment book of the lawyer.*

Because of the regularity of the obliterating strokes and the contrasting angles of portions of the underlying writing, it was decided to attempt to identify visually and remove physically the obliterating strokes while leaving the original writing. Several photographs of the areas in question, enlarged to three times the original size, were prepared for use as working models. One of the enlarged photographs became the exhibit upon which the strokes were "removed" with photographic retouching paint matching the light color of the background as they were determined to be a part of the obliteration. Close-up photographs of the obliterations, enlarged five to six times (Fig. 2), were taken in segments to assist in the detailed and thorough study of the strokes. This was necessary to separate differences in pen pressure, tapering of the beginning and ending strokes, and angles and direction reversals of the original writing and to differentiate these from the regularity and firmness of the obliterating strokes.

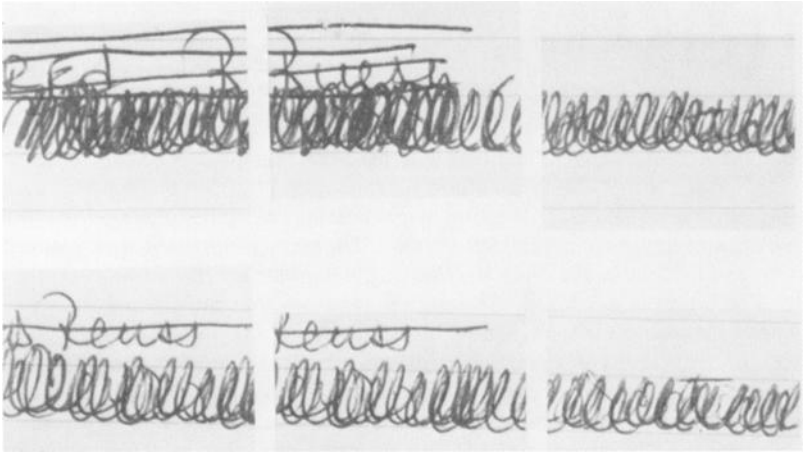

FIG. 2—*Close-ups of the appointment book obliterations.*

A familiarity with the handwriting characteristics and letter formations of the secretary's writing was gained by examing her handwriting which appeared on other pages of the appointment book. This also assisted in differentiating the original writing from the obliteration.

Using the original evidence along with the enlarged photographs of the obliterated areas, and using appropriate lighting and magnification, a systematic study of the involved area was undertaken. As each obliterating stroke was identified, it was followed throughout its looping course as far as possible. Each continuous obliterating stroke was tagged by marking or tracing over it with a different color ink on one of the enlarged working model photographs. The obliterating strokes had run back and forth over the original writing several times. As each stroke was definitely determined to be an obliterating stroke, it was carefully painted out using a removable paint such as tempra on another of the enlarged

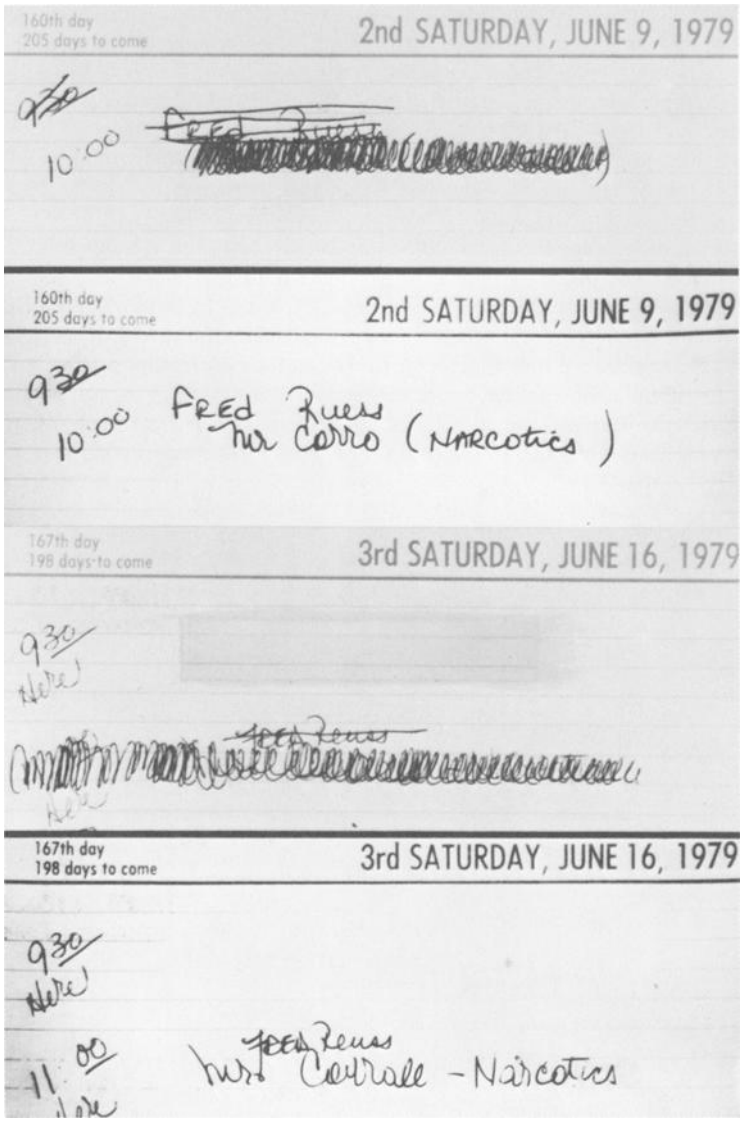

FIG. 3—*Final result showing original writing in appointment book.*

photographic working models. Care was taken to stop at each intersection to avoid removing a portion of a line that had not yet been determined to be an obliterating stroke. The effect of painting out these strokes with paint of the same color as the background (light gray) was to simply remove them from the picture. If a stroke should be painted out by mistake, the paint can be removed with water.

During this process, no retouching or additions were made to the strokes or lines comprising the original writing. The obliterating strokes were removed gradually, line by line and segment by segment. As more of the obliterating lines disappeared, it became more apparent which strokes were part of the original writing.

A variation in the method of removal of the obliterating strokes that has been used successfully is to ink out the obliterating strokes using a transparent ink such as yellow "magic marker" type of instrument. Rather than removing the strokes completely as in the opaque paint, this method allows the obliterating strokes to remain in view while still being identified as such by the colored ink. This may make it easier to identify other obliterating strokes as being extentions of strokes already identified and marked. It is helpful to be able to pursue each obliterating stroke for as long a distance along its course as possible.

The final result was the determination that the original writing consisted of the name "Mr. Corro" and the word "(Narcotic)" on both pages of the appointment book (Fig. 3). The "ll" at the end of the second name is probably also part of the obliteration. However, these lines could not be definitely identified as being part of separate markings or as a part of a continuous line obliterating stroke. Therefore, they were not removed.

This procedure was applied in another examination involving a bank fraud wherein a bank employee was suspected of obliterating two incriminating entries on a work sheet. The obliterating strokes were made using a horizontal back and forth movement of the pen in this case. Conventional methods of examination again failed to reveal the original writing. Because of the regularity of the obliterating strokes and the contrasting angles and strokes of the original writing, it was decided to use the technique in this case. Again, by applying the techniques described above, the majority of the original writing was revealed (Fig. 4).

A third example is illustrated (Fig. 5). In this case, the name can virtually be made out by

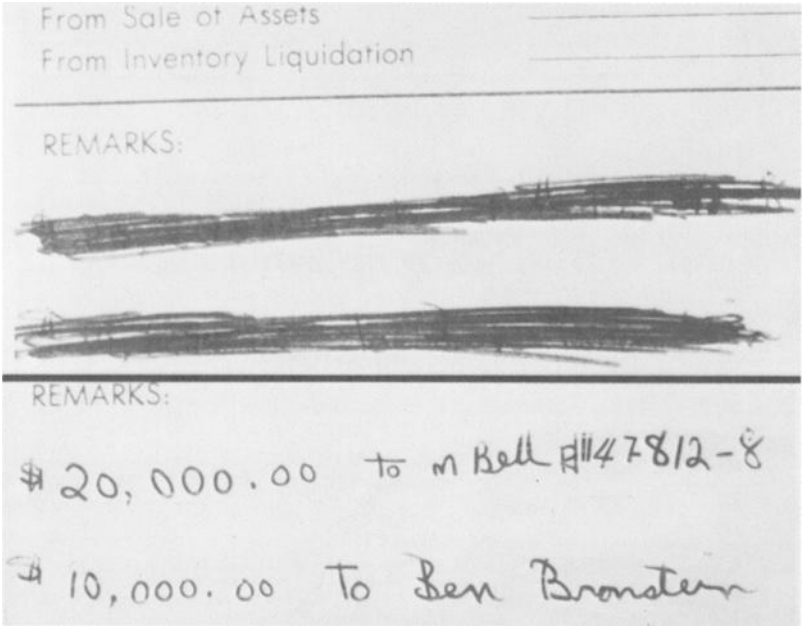

FIG. 4—*Work sheet examined in bank fraud case.*

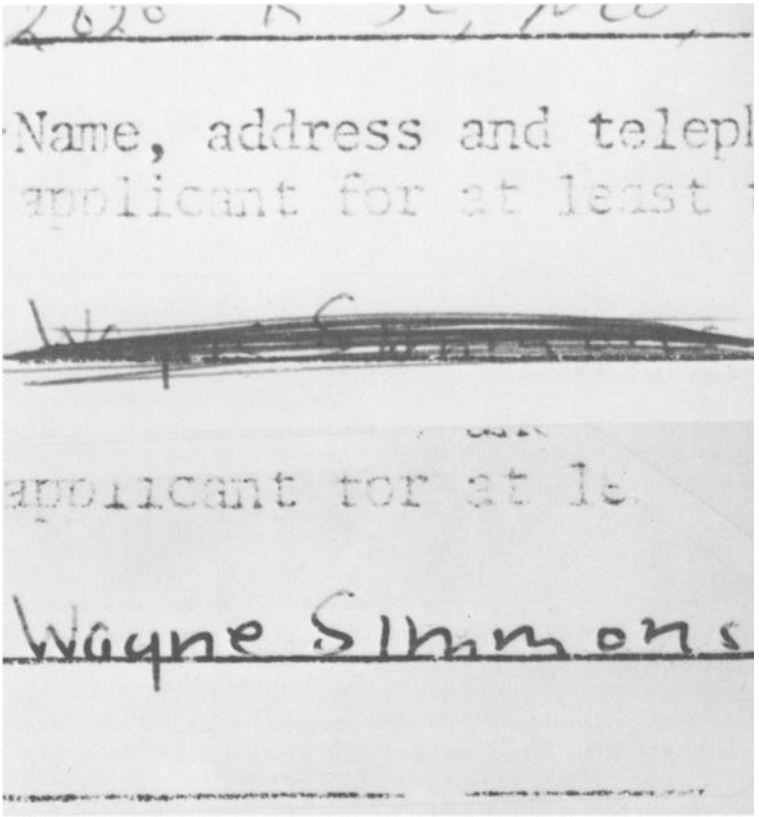

FIG. 5—*Third example of obliteration where the name can virtually be made out by visual examination.*

visual examination. This, however, illustrates the application of the technique to various degrees of obliteration.

Since the obliterating strokes are removed from a photograph and the original obliteration is left untouched, this is a nondestructive method of examination.

Because of the time-consuming nature of this type of examination, it should only be attempted when conventional methods prove unsuccessful. This method should be kept in mind for those instances where the obliteration meets the necessary criteria of regularity in the obliterating strokes and contrasting angles and strokes in the original writing.

References

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