

TECHNICAL NOTE

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Examination of Correction Fluid Obliterations

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ABSTRACT: The use of correction fluid, or white-out, is a common method of obliterating, altering, or covering up unwanted writing or typing. Removal of the correction fluid deposit using a solvent is a destructive method of examination. Photography with transmitted light is a nondestructive method which is not always successful. A third method that is both effective and nondestructive is the use of a product that renders the paper translucent. This liquid is applied to the paper under the opaque correction fluid deposit from the back. As the paper becomes translucent, the writing on the paper but under the correction fluid deposit is revealed. It is photographed, and the negative is printed in reverse so the writing will read right. The visualizing fluid is both volatile and inert, and in most cases will affect neither the paper nor ink.

KEYWORDS: questioned documents, correction fluid, obliterations

The use of correction fluid, also known as white-out, is a common method of obliterating, altering, or covering up unwanted writing or typing on a document. Correction fluid is a suspension of white or colored particles in a vehicle which leaves a deposit in the form of an opaque layer when applied to paper. The fluid dries rapidly and can be written or typed over. This type of obliteration is often found in connection with business records. Many brands of correction fluid are available such as Correctette[®], Liquid Paper[®], Miss Take Away[®], and Touch & Go[®]. Both water and volatile solvents are used as vehicles.

There are three methods of examination to ascertain the writing under the layer of correction fluid (Fig. 1a and b).

Visualization and photography with transmitted light will in many cases reveal the hidden impressions (Fig. 1c and Fig. 2a). Thick paper or a thick layer of the opaque material may prevent sufficient clarity to decipher the writing. This method is, of course, nondestructive.

An effective but destructive method is the removal of some or all of the opaque layer with a solvent such as acetone. During this process, whatever has been written over the opaque layer will disappear with the opaquing. Therefore, photographs must be taken before treatment.

A third method, reported by Thornton et al. [1], which is both effective and nondestructive, is the use of a substance that renders the paper translucent. In this procedure, the substance is applied to the paper under the correction fluid deposit from the back or oppo-

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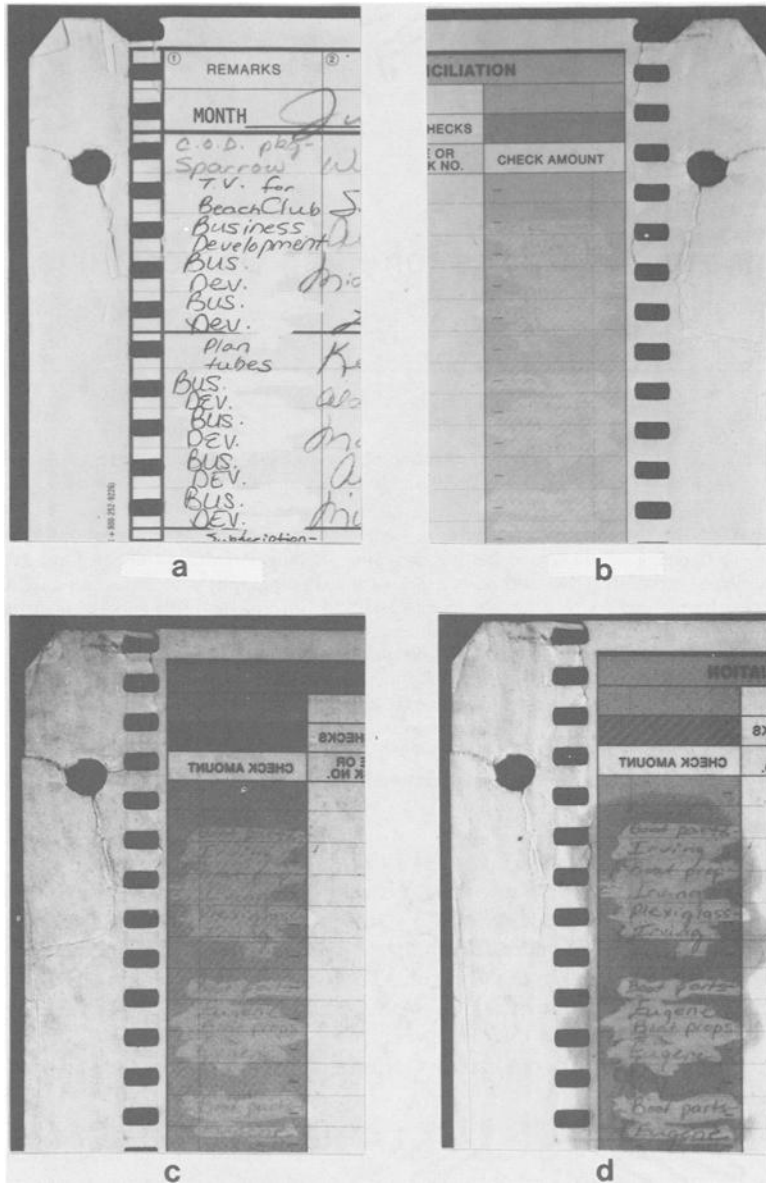


FIG. 1—The front and back of a document bearing correction fluid obliterations (a and b), a photograph with transmitted light (c), and a photograph using Liquid Window (d).

site side from the opaque layer. As the paper becomes translucent, the writing on the paper but under the obliterating medium will stand out readily against the opaque layer. Since we are in essence looking at the revealed impression from the back, we will see a mirror image. The image can be photographed with the negative printed in reverse to make the impression read right.

Many liquids will cause paper to become translucent. Most of these will destroy the document. Many readers are aware that certain substances such as Freon® are quite inert and will

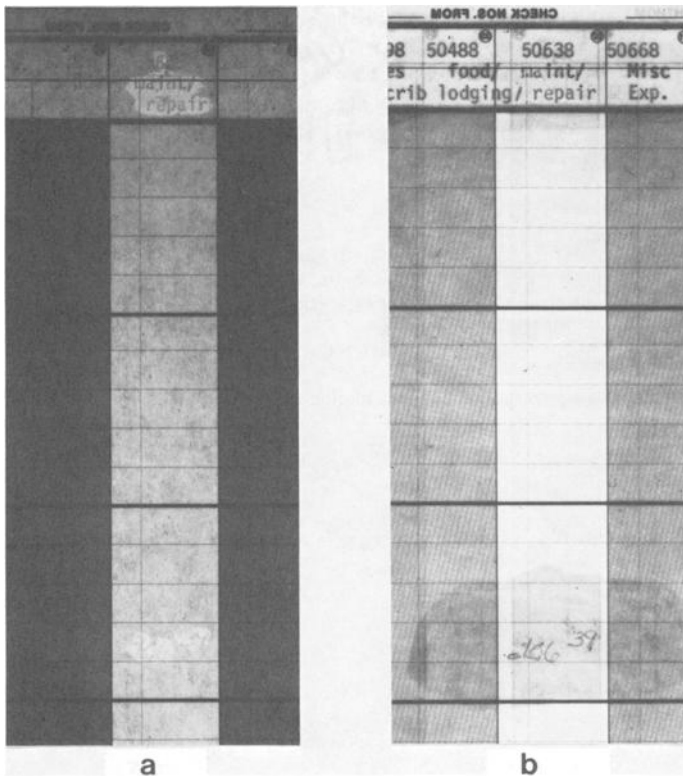


FIG. 2—Another part of the document photographed using transmitted light alone (a) and using *Liquid Window* (b).

temporarily render paper translucent while generally not affecting the paper itself or anything on the paper such as ink. The exact mechanism by which a liquid causes this effect is unknown. Paper is opaque because the random pattern of cellulose fibers and other constituents present an irregular surface which diffuses and reflects light allowing little penetration. It is speculated that a combination of factors are involved in causing the translucent effect. The liquid rapidly permeates the porous paper forming a smooth transparent layer reducing diffusion and reflection of the light rays permitting greater penetration. There may be some swelling of the paper fibers as they are wet which may have some effect by creating a less dense medium.

A line of products designed specifically for the purpose of rendering paper translucent without altering it has recently been marketed by Sunmark Research Company.² These products are called “visualization fluids” and are tradenamed *Liquid Window-SA*[®], *Liquid Window-SP*[®], and *Lucid-SA*[®]. The chemical makeup of these substances is proprietary information. These fluids, being nonpolar, are very poor solvents, and therefore, quite inert. They are also extremely volatile, evaporating without leaving a trace.

Tests by the manufacturer have shown that these “visualization fluids” have no effect on most inks, dyes, correction fluids, papers, and photographs [2]. The fluids are effective in rendering temporarily translucent a wide variety of papers including manila, kraft, colored paper, and card stock (Fig. 1*d* and Fig. 2*b*).

²Sunmark Research Co., P.O. Box 2572, Alexandria, VA 22301, phone (703) 644-8744.

The fluid can be applied by brushing, pouring, dispensing by dropper or pipette, or spraying it onto the paper. Since the substance is very volatile, the effective period of translucency is 10 to 15 s. If anything other than a quick scan is desired, or for photography, steps must be taken to retard evaporation. This is readily accomplished by sandwiching the document between sheets of Mylar® as the fluid is applied. The document can also be completely immersed in the liquid.

References

- [1] Thornton, D., Totty, R. N., Hall, M. G., Roberts, B. R. G., and Harris, J. A., "A Technique for the Decipherment of Entries Obliterated by Typewriter Correction Fluids," *Journal of the Forensic Science Society*, Vol. 20, 1980, p. 230.
- [2] Product Technical Bulletin, Sunmark Research Co., Alexandria, VA.

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