

TECHNICAL NOTE

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A Rapid Method for the Preparation of Transparent Footwear Test Prints

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ABSTRACT: A simple and accurate method is presented for the preparation of transparent footwear prints for use as comparison standards. The technique employs the use of transparent sheets of clean-up film and fingerprint powder. The method has proven to be a valuable aid in forensic science cases that involve the examination and comparison of questioned two-dimensional footwear prints.

KEYWORDS: criminalistics, footwear, transparencies

The importance of preparing accurate test prints for use as standards in footwear evidence comparisons has long been known [1,2]. Normally, the test prints are produced by placing a transferable material, such as fingerprint ink or fine powder, on the sole or heel (or both) of the footwear in question [3]. The material is then transferred to a contrasting colored sheet of opaque paper, such as carbon paper or white bond paper [3,4]. The test transparencies are then produced by photographic means [1, p. 67].

Although these methods are time-tested and proven, we at our laboratory have found it advantageous to develop a procedure for the rapid production of footwear test transparencies that does not require the use of photography. The method described yields accurate, detailed, contrasting 1:1 transparent replications of the known footwear's sole or heel print, or both.

Method and Materials

After removal of all trace evidential material from the footwear evidence, the sole or heel portion of the footwear is moistened with water. All excess water is removed with a dry cloth. The moistened area is then covered with fingerprint powder. A fiberglass fingerprint brush, because of its weight, has been found to be the best implement for applying the fingerprint powder. At least four or five applications of the powder should be made to ensure complete and even coverage of the test surface.

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The item of footwear is then placed underside up on a table top. One side of a 280- by 405-mm (11- by 16-in.) sheet of Kodak's roller transport clean-up film is moistened with water. A squeegee is used to spread the water evenly over the entire surface of the film. The sheet of film should now be tacky. The film is placed on a soft mat or cushion of paper. Next, the treated footwear is applied to the tacky side of the film. The item of footwear is removed, and the film is allowed to dry (2 to 3 min). It is strongly suggested that several transfer prints be prepared to ensure reproducibility. After drying, the transfer prints are ready for use as comparison standards. The entire process takes approximately 15 min. Figure 1 shows the sole of a sneaker as it was received at the laboratory. Figure 2 is a transfer print made from the known sneaker.

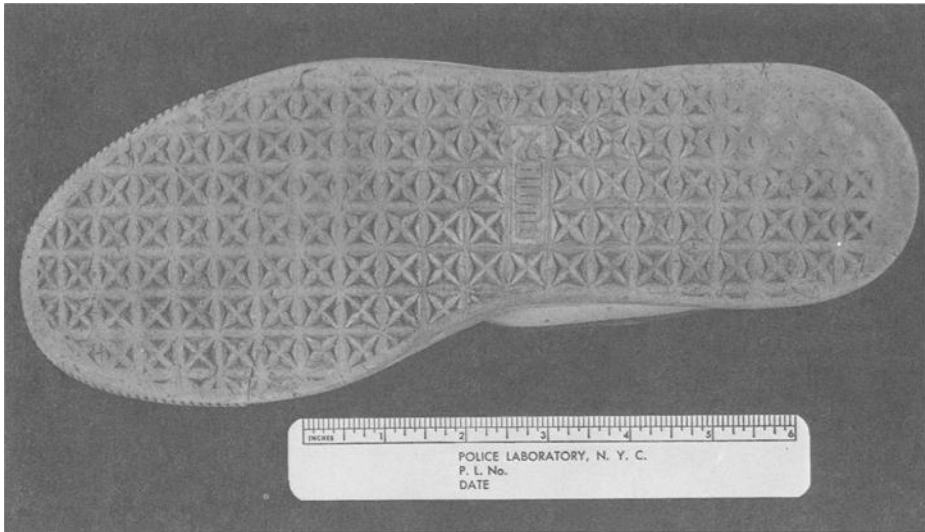


FIG. 1—The sole of a known sneaker as received at the police laboratory.

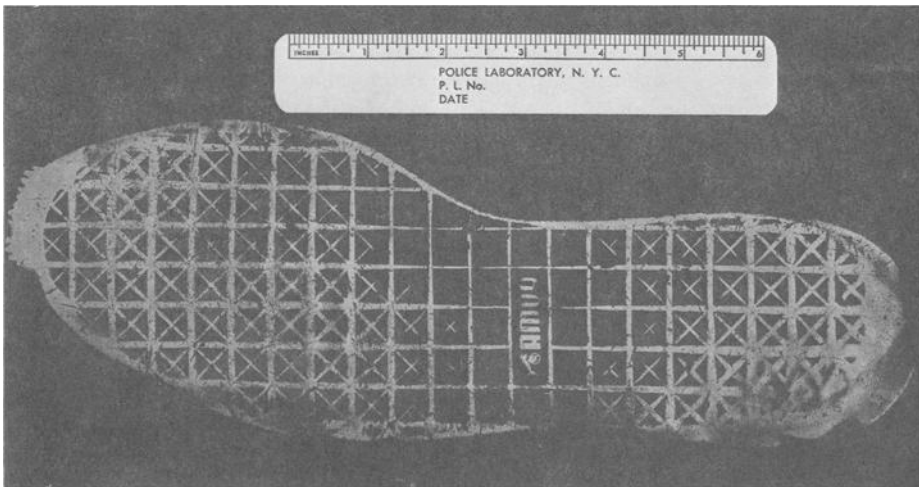


FIG. 2—A transparency made from the known sneaker photographed against a black background.

Results and Discussion

This paper presents an alternative means for preparing test transparencies of footwear evidence. We believe that this technique provides criminalists whose work involves footwear evidence with a new and valuable tool. The transparencies obtained are accurate, detailed, and a 1:1 replication of the original footwear evidence. The transparencies reveal in fine detail the class characteristics, wear patterns, and accidental markings present on the footwear.

These test transparencies can be made to fit any situation. They can be prepared to any size by simply cutting the sheets of film to the appropriate size. The transparencies can also be made to contrast against any background by employing fingerprint powders that are complementary in color to the background the questioned prints are on.

These two-dimensional transparencies are used in the comparison by placing them directly over the questioned footwear prints. They can be used right on the original transfer surface, if available, or with 1:1 photographs of the questioned footwear print. In addition, the test transparencies can be employed as overlays for court exhibits.

Conclusion

This method promises to be of great use in forensic science cases that involve the examination and comparison of footwear evidence. The method is fast and easy to learn and requires no equipment that is not readily available in most forensic science laboratories. This technique is presented as a different approach to the production of test footwear transparencies. It is not meant to replace the well-established methods now in use, but rather to make a new complementary method available to the forensic science community.

Acknowledgment

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