



### **D32 Progress Report on the Study of Photographic Technology Used to Document Footwear Impressions**

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After attending this presentation, attendees will understand the issues involved in photodocumentation of footwear impressions and preliminary indications regarding the ability of digital photography to render suitable images.

This presentation will impact the forensic community and/or humanity by helping the impending transition from traditional silver halide to digital photography.

As digital photography grows and the availability of traditional silver halide film subsides, the question of the technology used to photograph footwear impressions becomes more and more important. This study will examine the effect that photographic technology has on the examiners' ability to evaluate footwear impressions from photographs.

Recently digital cameras have come on the market that are purported to be, "as good as film," and while this is primarily advertising hype, practical experience as well as laboratory testing have shown that they are indeed quite good. In addition, printer technology is now available that should be able to render images adequate to the task of at least most footwear examinations. They have very subdued dot patterning, high resolution, and sufficient print size for the application. They are also priced within the range of most forensic laboratory budgets. At the same time as these new products have come on the market, film industry sources indicate that film sales down some 20% in each of the past two years.

The same test impressions will be photographed using four cameras: 35 mm film, 120 film, 6 mega pixel digital, and 12 mega pixel digital. All film prints will be made using traditional film printing and photographic paper. The digital prints will be made using modified silver halide photography (FUJIFILM Pictography 4000 printer) and an inkjet printer modified for increased resolution but restricted to black and white only. Exemplar photos will all be made using medium format film photography. Questions will be included to allow stratification of the sample based upon the experience levels of the respondents. Samples will be sent to approximately 100 examiners, each receiving a half replicate. Results will be evaluated using traditional statistical techniques. The results of a limited-sample pretest will be shown.

In preparation of this test a number of experts in the field of footwear examinations have been consulted to establish the tasks that respondents will be asked to perform. The responses will require the use of a Likert scale, and a five-point scale has been developed which should help reduce the standard deviation of the responses and not compromise validity. The experts also helped to assure that the approach to creation of the test samples is representative of the more stringent requirements that examiners encounter. Quality management experts from the U.S. Navy have assisted with the design of the experiment and will assist with the analysis of the data.

#### **Footwear, Digital, Photography**