



### **D4 Assessing Digital Photography: A Comparison of Crime Scene Photography Using Digital and Standard 35mm Film Based Cameras**

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The goal of this presentation is to inform the forensic community about research comparing digital and film based 35mm cameras used for crime scene photography and present photographs from crime scenes using digital camera technology.

This presentation will impact the forensic community and/or humanity by serving as a starting point for agencies that need validation of digital technology before a decision can be reached on the conversion from film-based cameras to digital technology. This poster will show that there are many advantages to moving toward digital technology, and that the technology is a valid replacement for standard 35mm film-based cameras.

The goal of the research is to validate the use of digital imaging as a replacement for standard 35 mm photography to document crime scenes. The research methodology involved crime scene photography, where two photographers documented crime scenes in duplicate. One photographer utilized a digital camera and a crime scene used a standard 35mm for comparison purposes. The parallel photography method was used on a variety of scenes, including homicides, suicides, unknown deaths, and cars processed in the evidence cage. The digital camera used for this study was the Nikon 5700 SLR 5.0 mega pixel camera. The crime scene technicians used a Pentax® K1000 camera with a 28-70mm zoom lens. The film used was Kodak 35mm color film with ISO 100. After digital picture capture to a 256 MB CompactFlash™ card, the images were then downloaded to a computer, saved to CD-ROM, and then printed. The pictures were then compared to the 35mm film prints by side-by-side visual comparisons.

The results showed very little difference between the standard 35mm and the digital pictures. In many cases, the digital pictures were actually clearer and represented the scene more accurately than the standard 35mm. In instances of close proximity to object of focus, the on-board flash was sufficient for scene illumination. However, in other instances such as the evidence-processing cage, the on-board flash was inadequate and produced images that were much darker than the 35mm prints that utilized a detachable sync cord attached flash.

The conclusion reached by this research is that digital photography at crime scenes can be as good as traditional methods, if not better in some instances. The digital camera had some shortcomings, especially concerning the flash. The flash problem could be easily remedied by using a detachable flash with the available hot shoe mounted on the camera. More research can and should still be explored in this area using the parallel scene method.

Over the course of this study, it was found that more law enforcement agencies have already made the switch to digital or are in the process of researching the method to make the conversion to digital. As technology improves, it is likely that more agencies will be moving to digital photography. A possible reason for the switch is a monetary savings, much needed by agencies that are incurring budget cuts. After the initial expenditure for conversion, one agency reported a savings of about six thousand dollars a year over film-based processing.

One of the stumbling blocks for the digital conversion is the technology's acceptance in the court system. Out of the thirteen agencies polled, seven of the agencies are using digital in some capacity for crime scene documentation. Of those seven agencies, there were no problems reported with court acceptance of the digital images. The Scientific Working Group of Imaging Technology (SWGIT) has created guidelines for the use of digital images in criminal justice system. Agencies should consider these guidelines and clearly define procedures for image captures, processing, and storage to properly account for images in the event of a court challenge to the technology.

The research presented may be able to serve as a starting point for agencies that need validation of digital technology before a decision can be reached on the conversion from one technology to another. Before considering the conversion to any new technology, law enforcement agencies should speak with district attorney's in their system to determine the probability of court acceptance. Agencies considering the conversion should also explore the cost of the conversion, any change in yearly cost (positively or negatively), and determine a set of standard operating procedures that will follow SWGIT guidelines and best suit their organization.

#### **Digital Cameras, Crime Scene Photography, Digital Imaging**