



B25 Analysis of Manipulated Photographs Submitted to Federal Court and the United States Congress

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After attending this presentation, the attendees will have an understanding of the features of a manipulated photograph submitted to federal court that was likely fabricated in 1993 or early 1994 as well as another manipulated photograph that was submitted in a report to the United States Congress in 2004.

This presentation will impact the forensic community by providing investigative techniques for the detection of manipulated photographic evidence.

Images are routinely recorded in many autopsies, and may be useful in ascertaining the details of the cause of death. The analysis and interpretation of those images generally assumes that they are properly taken and handled, and can be relied upon. This paper concerns a case in which manipulation of such an image may have led to an unfounded conclusion.

In 1994, as a result of a wrongful death civil case in federal court (*Sara Sabow et al. v. The United States, US District Court, Central District of California, Southern Division. SA CV 933-991 AHS*), the defendant, the United States Department of Defense, released to the plaintiffs approximately 30 autopsy photographs of the decedent. The decedent's autopsy was performed by an Orange County (California) Coroner's medical examiner. The plaintiffs alleged the decedent died due to a powerful blow to his posterior head on the right occipital and not by an intraoral shotgun blast which followed the blow to the head. The defense claimed the victim died solely by the intraoral shotgun discharge and the death was by suicide.

One of the autopsy photographs differed from all the other autopsy photographs by being poorly taken. This photograph of the victim's posterior upper body appeared to have had the flash too close to the victim's lower left side, which caused the upper back, neck, and left pinna to be overexposed. Most of the head and background was cast into deep shadow. Simulation of the lighting conditions on a mannequin produced a similar image, but the apparent lack of illumination of the victim's head in the questioned photograph could not be duplicated.

Digital analysis of a high resolution image of the questioned photograph shows that it was likely the result of manipulation, either in the darkroom or, less likely, image processing. It was determined that the questioned photograph, unlike the other autopsy photographs, lacked background detail within its deep shadow. The deep shadow areas also had fine parallel stripes when lightened by increasing gamma. In lighter regions of the photograph, parallel stripes were also apparent and perpendicular to the stripes discovered in the deep shadow areas. Similar stripes have been described by Russ as a common defect of flatbed scanners of this period.¹

It was determined that a nearly identical photograph to the questioned photograph that was submitted in a report to the US Congress in 2004 was a different fabrication. Thus, there are two photographs submitted in this case that have indications of improper manipulation.

In December 2012, the original unmodified photograph was discovered from which both manipulated photographs were apparently generated. The original photograph allowed for a more detailed analysis of the questioned photographs and proved beyond reasonable doubt that perjured submissions had occurred: the first in federal court and the second to the United States Congress.

The original, unmodified photograph shows the purpose of both image alterations was to hide the pronounced swelling of the victim's upper right neck which is attributed to a premortem blow to the back of the victim's head. This suggests that there was knowledge of a blow to the head prior to the intraoral shotgun discharge and the decedent was a victim of homicide.

An image of the second altered photograph was extracted from the pdf file of the report to the U.S. Congress. Clipping of the blacks by pdf conversion and low resolution prevents a detailed analysis.

The author of the 2004 report to the U.S. Congress, which contains the second manipulated photograph, has been informed of these findings and has not responded.² It is strongly suggested that this expert should re-evaluate this new evidence and determine if it would impact his previous conclusions on this case.

Many thanks to Dr. John C. Russ for his assistance in this study.

References:

1. Russ, J. *The Imaging Processing Handbook*, Second Edition, CRC Press, 1995 p. 31.
2. Nordby, J. *The shotgun death of Col. James Sabow*. Report to Congressman Duncan Hunter, Chairman of the Armed Services Committee, United States Congress, August 26, 2004.



Digital & Multimedia Sciences Section - 2014

Manipulated Photograph, Imaging Processing, Federal Court