



D21 The Rosario Shooting Incident: A Complex Analysis and Reconstruction

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After attending this presentation, attendees will become familiar with techniques for performing shooting reconstruction and analysis.

This presentation will impact the forensic science community by teaching novel and advanced techniques and technology for shooting reconstruction and analysis.

An officer involved shooting occurred in which two NYPD police officers fatally shot two suspects. Firing three handguns, a total of 28 rounds were fired by the officers striking the two decedents 8 and 14 times, respectively. The shooting scene included many bullet defects in the floor beneath where the decedents were laying.

The primary issue: Were the two decedents shot while on the floor or while they were active. Secondary issues included the location of the two shooters; the movements of the decedents; and time involved in firing the 28 shots. The physical evidence included the location of entry and exit defects on the bodies, wound paths, shored entrance and exit wounds, the bullet defects on the clothing, and the presence or absence of gunshot residue and bullet residue on floor and clothing and the significance of this evidence.

This paper demonstrates the methodology involved in a multidisciplinary approach to the reconstruction and analysis of a shooting incident in which bullet impact damage, cartridge case locations, victim wound path evidence from the autopsy, experimental, and photographic analysis and other elements are all integrated into an overall analysis which can be used to make significant determinations. These facts can then be utilized to determine what could and could not have occurred and specifically, if the description of the two police officers is or is not consistent with the physical evidence. Although a shooting incident reconstruction always includes the forensic crime laboratory analysis of the physical evidence, an effective reconstruction requires an understanding of the capabilities and dynamic characteristics of firearms, projectiles, ejected cartridge cases, gunshot residue, and the dynamics associated with bullet penetration into and out of clothing. This case is an effective example of how all these items can be integrated into an analysis and reconstruction of a shooting incident.

Additional important components in the overall reconstruction include the analysis of layers of clothing, the alignment of bullet defects in the clothing; advanced photographic analysis to attempt to correlate the floor defects with the gunshot wounds on the bodies and to create overlays of clothing layers for analytical purposes and to be used as exhibits; experimental ballistic testing; chemical tests used to distinguish entry from exit; the use of 3D computer animation modeling for both analytical purposes and to be used as demonstrative exhibits. High speed video imaging of relevant ballistic phenomena and fabric dynamics were also utilized for analytical and demonstrative purposes. This paper will discuss the incident, the evidence, and specifically how the analysis and reconstruction was performed.

Shooting Reconstruction, Gunshot Analysis, 3D Modeling