



C10 Analyzing Video Evidence in Officer-Involved Shooting Cases

Parris Ward, JD, Biodynamics Engineering, Inc, 1011 Swarthmore Avenue, Ste 1, Pacific Palisades, CA 90272*

After attending this presentation, attendees will understand how enhancement and analysis of video evidence, in conjunction with a computer animation, led to the acquittal of a police officer who was criminally charged in a controversial high-profile officer-involved shooting.

This presentation will impact the forensic science community by demonstrating how video evidence becomes more prolific in police use-of-force cases through the increasing use of body cameras, cell phones, and surveillance systems. This presentation will indicate how to properly analyze such evidence and understand its limitations.

On September 16, 2016, a White female police officer shot and killed an unarmed Black man while he was standing next to a Sports Utility Vehicle (SUV) in the middle of a road in Tulsa, OK. The incident led to protests in Tulsa and the case received national attention when video of the event, taken from a helicopter and police dashcams, was released to the media by the Tulsa Police Department two days later. On September 22, the Tulsa district attorney filed first-degree manslaughter charges against the officer involved, a charge which carries a maximum penalty of life in prison. After a seven-day trial, in which the video evidence was carefully considered, the officer was found not guilty.

At approximately 7:30 p.m., Officer Betty Shelby encountered an abandoned vehicle in the middle of a two-lane road, blocking on-coming traffic. After stopping to check for people inside the vehicle, she walked back to her own vehicle where she was approached by an incoherent Black man, later identified as Terence Crutcher. The man was mumbling and reaching into his pockets despite repeated commands to keep his hands out of his pockets. Officer Shelby radioed for help stating, "I have a suspect not showing his hands." The man walked around the rear of Shelby's police cruiser as she followed, stopping at various points and reaching into his pockets. The helicopter video of the event begins as the man starts walking toward the SUV with his hands raised. Officer Shelby stated that she pointed her gun at Mr. Crutcher and ordered him to stop and get down on the ground. Mr. Crutcher ignored her commands and kept walking, eventually stopping next to the driver-side window of the SUV. At this point, another officer arrived on scene and stood next to and slightly behind Officer Shelby, pointing his TASER® at Mr. Crutcher. Both officers stated that Mr. Crutcher dropped his left hand and reached into the open window of the vehicle, at which point both officers fired their weapons simultaneously. The single shot fired by Officer Shelby entered Mr. Crutcher's right chest and damaged his heart and lungs, resulting in his death. The autopsy revealed Mr. Crutcher to be under the influence of PCP. No weapon was found inside the SUV.

The helicopter and dashcam videos became the central evidence in the case, although neither was clear enough to be definitive as to whether Mr. Crutcher reached into the window under normal viewing. The helicopter Forward Looking Infrared Radar (FLIR) camera provided the best viewing angle of the event; however, it only produced a standard-definition interlaced recording. Due to the motion of both the camera and helicopter, the individual interlaced video frames lacked clarity.

Using forensic video analysis software, the helicopter video was de-interlaced, stabilized, clarified, and enlarged in order to facilitate a frame-by-frame analysis that showed that Mr. Crutcher's arm was inside the window opening at the time he was shot. Audio from the dashcam video recorded the sound of a single shot, confirming that the TASER® and gun were fired simultaneously.

Since the video evidence only revealed the end of Shelby's encounter with Crutcher, her defense team looked at ways to tell the story of how the event unfolded. A synchronized video narrative was produced, tying together initial 911 calls, radio transmissions, multiple dashcam recordings of responding units, and the helicopter video into a single timeline. A computer animation was created showing the various locations Officer Shelby and Mr. Crutcher prior to the beginning of the helicopter video. These videos, together with the enhanced helicopter video, will be presented in addition to a detailed discussion of how they were created.

Shootings, Video Analysis, Computer Animation