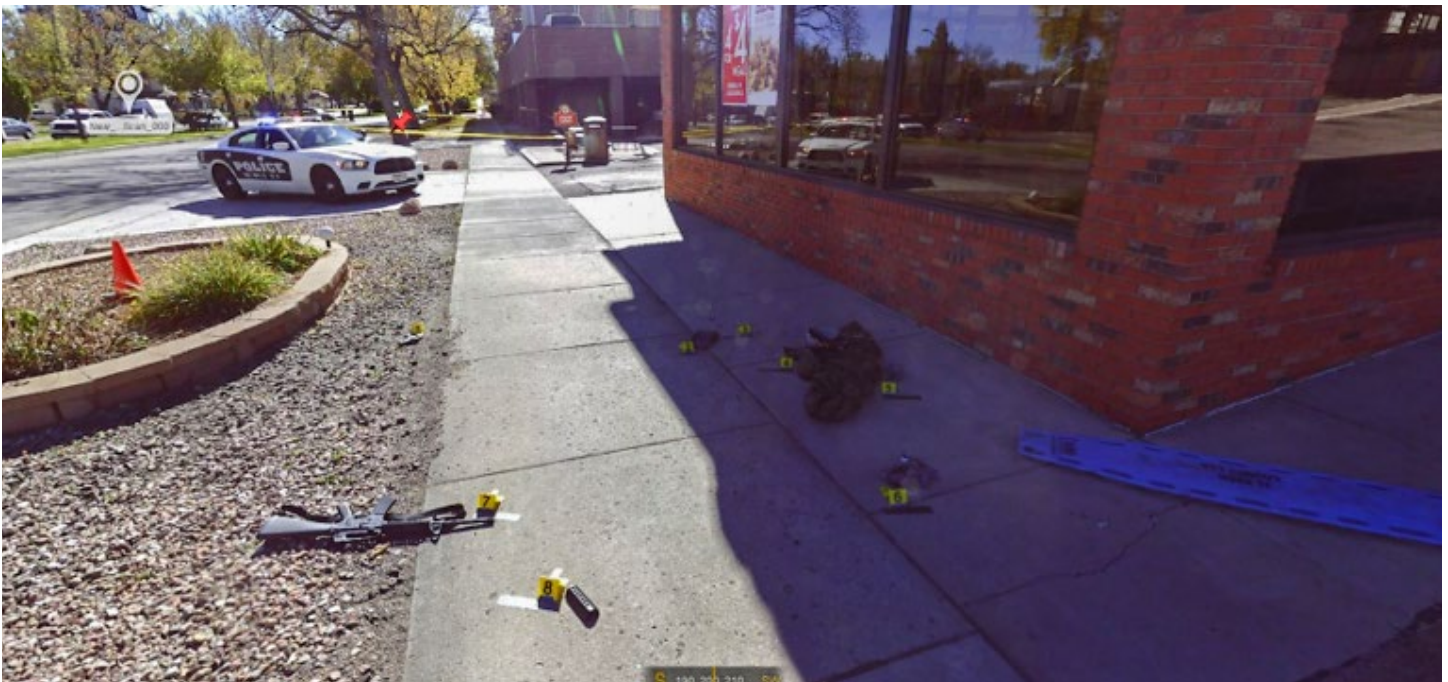


Colorado Springs Police Department Uses FARO® Laser Scanner to Document Scene of Mass Shooting

Peter Quick | Senior Crime Scene Investigator | Colorado Springs Police Department



Challenge

Previously, the Colorado Springs Police Department found that large, outdoor crime scenes were extremely time consuming to document, requiring at least two measurements for each piece of evidence. They also were not satisfied with the 2D diagrams they created from those measurements because it often was difficult for a jury to gain a good understanding of the scene from those limited representations.

Solution

Today, the Colorado Springs Police Department crime scene investigators use a FARO Focus Laser Scanner to accurately capture evidence at crime scenes, like the multiple-homicide event that occurred on October 31, 2016. They also use FARO software applications to register the data collected.

Results

Less than an hour was required to completely capture this large crime scene with their FARO Laser Scanner and take provide the necessary measurements needed to document 55 pieces of evidence. It would have taken investigators many hours to obtain these critical details using their previous methods. FARO software applications were then used to register the scans into a 3D model of the scene, create an animation to portray witness statements, and create a 360-degree, photo-realistic representation of the scene that could be used in court.

Police Respond to Call of a Suspect Randomly Shooting People

On October 31, 2016, at approximately 0900 hours, the Colorado Springs Police Department responded to calls of a male subject walking down the street indiscriminately shooting people as he walked. Police found the subject near an intersection in the downtown area. The suspect and the police exchanged gunfire and the suspect was eventually shot by police in front of a fast food restaurant.

Crime Scene Investigators were called to investigate the Officer Involved Shooting scene, as well as two other locations where the suspect had shot and killed three citizens. The FARO Focus Laser Scanner was used to document all three scenes. Based on the scans captured at the scenes, investigators were able to determine the sequence of events and reconstruct the scene which greatly assisted with the shooting review.

The Investigator's Process – Previously Compared to Today

Prior to using the FARO Focus Laser Scanner, Colorado Springs crime scene investigators would first photograph the scene as it was seen upon arrival. They would then identify and mark each item of evidence, and re-photograph the scene with placards in place. The investigator would then have to take at least two measurements of each item of evidence that would be used to create a 2D diagram of the scene. With a large outdoor scene, this is an extremely time-consuming process and it is often difficult to create a very accurate and representative diagram. There was always the chance that some small detail would be missed and not measured which would become important to the case later. In that case, since the scene had usually completely changed, there was no way to go back later to get the missing data.

Today, Colorado Springs crime scene investigators use the FARO Focus to document crime scenes, including this tragic shooting that took place on October 31, 2016. Senior Crime Scene Investigator, Pete Quick, explained the process they used on that day:

“In order to fully document this scene, we photographed it, identified each item of evidence and then re-photographed the scene. We then completed a total of 5 scans in various areas of the scene. Each scan took approximately 11 ½ minutes to complete. So, in less than one hour we were able to document the entire intersection and all 55 items of evidence. After completing the scans, the evidence was collected and the intersection was released.”

Upon returning to the office, Quick's team used FARO's SCENE software to register the scans together to create a single point cloud. This point cloud is a large, 3D model of the scene that is dimensionally accurate. Using FARO's forensics software, investigators used the captured point cloud data to create an animation of one of the patrol vehicles driving down the road and being shot by the suspect. This animation was created to accurately portray witness statements and the location of evidence found on scene.



This image shows the view of the scene from East to West, toward the front of the Wendy's restaurant. The suspect's weapon was recovered from the sidewalk, shown by the arrow on the right. The red arrow above the patrol car shows the trajectory of the suspect's projectile through the patrol car.



The suspect shot at the patrol vehicle while it was turning from Platte Ave. onto Wahsatch Ave, shown by the upper arrow. The suspect was in this area when firing at the officer. The lower arrows mark locations where cartridge casings from the suspect's weapon were found.

Investigators were able to determine that the suspect walked west on the south side of Platte Avenue. As a patrol officer approached the intersection of Platte and Wahsatch Avenue, his vehicle was shot by the suspect as he fired from the middle of Wahsatch Avenue. Investigator Quick explained, "Using bullet defects that we scanned in vehicles and nearby buildings, including the high school, we were later able to identify approximate trajectories for several of the shots fired by both the suspect and the officers."

After these shots, the suspect continued southwest until he was in front of a Wendy's restaurant. Additional officers arrived and began to approach the suspect's location on foot from the North. Officers fired at the suspect from that location and the suspect was killed.

FARO Laser Scanner Saves Hours and Provides Full Representation of the Scene

For police agencies without access to a FARO Laser Scanner, it would probably take many hours to obtain all of the measurements necessary to document this scene with more than 50 pieces of evidence. The typical result, when using traditional documentation methods is to create a basic 2D diagram of the scene. On the other hand, using a FARO Focus Laser Scanner dramatically reduces the time required to capture the evidence and it provides an extremely accurate, digital representation of the entire scene.

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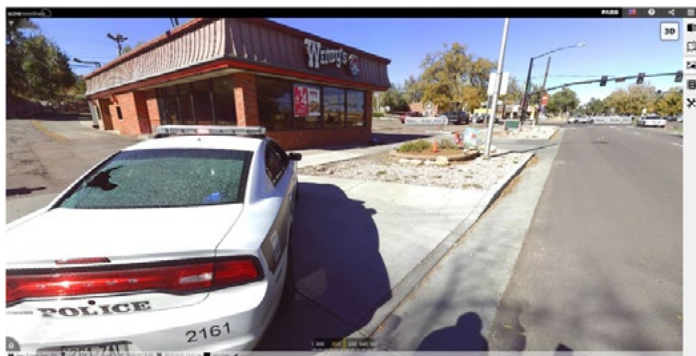
"With the FARO Scanner, we are able to create photo-realistic, full-color, 3D diagrams for prosecutors to use in court. These images help members of the jury gain a perspective on what the actual scene looked like that is just not possible to do with 2D diagrams", explained Investigator Quick. The team also used FARO's SCENE sharing software (SCENE 2go) to display 360-degree, panoramic views at each scan location. These views can be used to show measurements and are ideal for use in case reports and to show a walkthrough of the scene in court.



Suspect was transported to the hospital from this location.

Investigator Quick described the importance of FARO's software tools to his investigations. "I have successfully used scans and presentations in court to describe where items of evidence were located in a scene, as well as performed many crime scene reconstructions using the FARO software," he commented.

Several screen shots of the project for this case are shown below, along with Investigator Quick's comments. According to Quick, "SCENE 2Go is an extremely useful tool for forensic investigations, since it does not require an internet connection or a powerful computer to run this program. The view of the scene can be shown in the courtroom and used by the jury while in deliberation. In addition, the investigator can show measurements from any point to any other point in the scan. From the witness stand, I have used a wireless mouse to control my computer and show measurements as the district attorney asked me questions about the scene. I have heard nothing but positive things from jurors who have been interviewed after trials where this technique was used."



This and the following images are panoramic photographs captured at the scene with the FARO Focus^{3D} X330 Laser Scanner.



Conclusion

When a law enforcement agency investigates a mass shooting, it means mobilizing investigators and equipment. This translates to tapping the agency's most valuable commodity: time. So, it's no wonder that more agencies are turning to laser scanning as a faster way to document scenes and capture the entire field of evidence data, with higher accuracy than achieved ever before.

To this day, investigators at Colorado Springs Police Department know they made the right choice by transitioning to laser scanning. Not only does scanning allow the investigators to capture more data, it creates clear and compelling presentations for court.

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