

STATE OF MINNESOTA

DISTRICT COURT

COUNTY OF HENNEPIN

FOURTH JUDICIAL DISTRICT

State of Minnesota,)
)
 Plaintiff,)
)
 vs.)
)
 MOHAMED MOHAMED NOOR,)
)
 Defendant.)

**STATE’S OFFER OF PROOF IN
SUPPORT OF LEICA FLYTHROUGH
VIDEOS**

MNCIS No: 27-CR-18-6859

To: THE HONORABLE KATHRYN QUAINANCE, HENNEPIN COUNTY DISTRICT COURT JUDGE; COUNSEL FOR DEFENDANT; AND DEFENDANT.

INTRODUCTION

The defendant is charged with second degree intentional murder, third degree murder, and second degree manslaughter. Trial is set for April 1, 2019. On February 15, 2019, the defendant moved the court to prohibit the State from presenting two 3D flythroughs of the crime scene that were created by the Minnesota Bureau of Criminal Apprehension. The defendant’s motion to exclude the flythroughs consists of one conclusory paragraph asserting, essentially, that the flythroughs are unrealistic and speculative. The defense raises no specific objection based on the Minnesota Rules of Evidence or case law. The court requested the State to submit a written offer of proof on foundation for the exhibit, which follows. Additionally, the parties agreed that the court should review the videos *in camera* and they are being provided to the court on a flash drive at the time of filing.

OFFER OF PROOF

The Minnesota Bureau of Criminal Apprehension, like any law enforcement agency, attempts to fully document the crime scenes that it investigates. This includes recording the relative

locations of objects and evidence, the distances between them, and other relevant measurements. Before the advent of various computer-aided forms of scene documentation, this used to be done with photographs and tape measures. The BCA's methods have evolved with the times.

The BCA previously used Panoscans, which have been admitted into evidence numerous times in Hennepin County District Court. Panoscans were panoramic pictures of crime scenes that allowed the viewer to see multiple aspects of a scene at once. However, Panoscans had certain limitations. For example, they generated a "fish eye" view that does not fully represent spatial dimensions and relative distances. They were also more time-consuming for the BCA to construct and required more on-scene efforts that were subject to human error.

Since early 2017, the BCA has been using Leica scanners to document crime scenes. Leica is a German company founded in 1914 that manufactures a variety of products, including cameras, binoculars, microscopes, and—pertinent to this case—3D laser scanners. *See* <https://leica-geosystems.com/en-US/products/laser-scanners>. These instruments were originally created for architectural scanning and surveying, but are now used by law enforcement agencies nationwide to document crime scenes. *See, e.g.,* <https://leica-geosystems.com/en-US/case-studies/public-safety/two-domestic-terrorist-attacks--documented-with-leica-scanstation> (discussing the use of Leica scans to document the mass shooting scene at Fort Hood, Texas).

The BCA agents who prepared the Leica scans in this case were trained by Leica to use their equipment and software. As an agency, the BCA tested the Leica scanner for approximately three to four months before using it at a crime scene. One of these tests included creating a 3D map of the interior of the U.S. Bank Stadium, which was successful. By the time of Ms. Ruszczyk's death, the BCA had used Leica scanners to document other crime scenes.

The Leica scanner uses lasers to create hundreds of thousands of data points in a 3D scan. The scanner and its attendant software assign X, Y, and Z coordinates to these data points, thereby creating the ability to measure distances, elevation, and other factors. This is called “point cloud data.” The BCA used this point cloud data to create multiple “flythrough” videos of the crime scene. The State seeks to admit two of the flythroughs.

The first flythrough video¹ shows, among other things, where the defendant’s squad car was located in relation to Ms. Ruszczyk’s body. It shows measurements of the specific distances (1) between Ms. Ruszczyk’s body and the squad car, (2) from the ground to the bottom of the squad car window, and (3) from the ground to Ms. Ruszczyk’s bullet wound. The BCA was also able to insert lines showing potential bullet trajectories that take into account known measurements and facts from the scene.² Thanks to the comprehensive nature of the 3D scan, all of these measurements will be viewable to the jury from a variety of angles and perspectives.

For the second flythrough video³ the BCA contracted with Collision Forensic Solutions, LLC, a Colorado company, to add more measurements to one of the flythrough videos. The additional measurements show more of the possible trajectories of the bullet fired by the defendant. For both videos, all relevant witnesses will make clear in their testimony that the measurements only show *possible* trajectories of the bullet. The State will not argue, nor will its witnesses represent, that Leica scans are able to say exactly where the defendant’s gun was—or where Ms. Ruszczyk was standing—when the defendant fired. As such, the defendant’s argument that the flythroughs are “speculative” is without merit.

¹ This video is labeled “Flythrough_Lines_Measure” in the materials provided to the Court.

² For example, because it is known that the defendant fired only a single shot and that there was no damage to the interior of the vehicle, this limits the number of paths the bullet could have traveled.

³ This video is labeled “MPLS_OIS_Video_2” in the materials provided to the Court.

A full and accurate 3D scan of a crime scene conveys more information than mere still photos of a crime scene or a 2D diagram. With a 3D scan, the jury can see the spatial relationships of various items of evidence. The flythrough readily and clearly demonstrates relevant measurements—for example the height of Ms. Rusczyk's bullet wound as compared to the height of the squad's driver-side window through which the defendant fired his gun. These pieces of information are critical in this case because it is disputed how the defendant and Ms. Rusczyk were positioned when he killed her. The flythrough video will aid the jury in numerous ways, but most importantly, it will help them evaluate the testimony of Officer Matthew Harrity, and of course, the defendant, if he chooses to testify.

Respectfully submitted,

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