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James. M. Manni
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November 23rd, 2020

John C. Corrigan, Esq.
Assistant Attorney General
R.I. Department of Attorney General
150 South Main Street
Providence, RI 02903

Dear Attorney Corrigan,

On October 19th, 2020, the Rhode Island State Police was tasked with assisting your office with the investigation of a crash event involving a Providence Police Cruiser and a Yamaha Zuma Scooter on Elmwood Avenue at Bissell Street. On November 6th, 2020, I completed the Collision Reconstruction Unit Report and a copy was delivered to your office on November 9th, 2020.

On November 16th, 2020, I received an email from you advising that your office had reviewed the report and had formulated six (6) questions in need of answering/further clarification. That afternoon we spoke and verbally discussed each one of these questions in detail.

On November 22nd, 2020, I received an additional email from you requesting that I address two of these original questions formally in writing.

The first question I was asked to address is the following:

- 1) Can you explain/add detail to what is meant by emergency steering and emergency braking?**

On page 114 in the Conclusion section of my report, I characterized Officer Endres' steering and braking just before striking the stop sign post as an "emergency steering and braking maneuver." This characterization was based upon a review of the data retrieved from the Cruiser's Airbag Control Module. This data indicated that approximately one (1.0) second prior to striking the stop sign post, Officer Endres activated the brakes of the Cruiser. At this point Officer Endres had increased his steering wheel angle from almost straight ahead, to approximately 266 degrees to the right. At a half second (0.5) prior to striking the stop sign post, the Anti-Lock Braking System of the Cruiser was activated – this is an indicator of maximum pressure being applied to the brake pedal and an attempt

to use the maximum braking efficiency of the vehicle. The steering wheel angle at this point had come back to the left slightly and was approximately 172 degrees to the right. At the time of the impact with the stop sign post (0.0), the Anti-Lock Braking System was still activated, and the steering wheel angle increased back to the right approximately 269 degrees. During this one second interval, the indicated speed of the Cruiser decreased approximately eight (8) miles per hour.

The figure below was taken from a surveillance video and indicates the location of Officer Endres' vehicle approximately 0.73 seconds before its collision with the stop sign post. It is during this time that the steering wheel angle increases to the right. At the half second mark (0.5) the Cruiser's Anti-Lock Braking System will be recorded as being enabled and the airbag control module recorded steering back to the left. During the next half second interval, the steering increases rapidly to the right again with continued ABS braking before striking the stop sign post.



Video Time 5:50:09.433

The characterization of Officer Endres' actions as an "emergency steering and braking maneuver" is based upon a comparison of his driving to the training received during the Emergency Vehicle Operations Course (EVOC). In the EVOC course, there is specific instruction taught during the Steering and Evasive Course and the Emergency Braking Course. In the Steering and Evasive Course, participants are taught how steering affects side to side lateral weight transfer and how to maintain proper steering control during the weight shift. In the Emergency Braking Course, participants are taught how full braking affects front and rear longitudinal weight shift. When both courses are combined, participants understand how the vehicle will perform and learn its limitations during a combination of emergency steering and emergency braking.

Based upon Officer Endres' position in the roadway and the heading of the Cruiser at this point, I believe that Officer Endres began steering the Cruiser to the right to follow the scooter onto Bissell Street. Once Officer Endres realized his trajectory towards the building and the stop sign post, he applied rapid steering and maximum braking in an effort to avoid striking an obstacle – in this instance the stop sign post, the building on the corner, and/or the Yamaha scooter. These steering and braking actions are consistent with obstacle avoidance techniques using emergency braking and steering maneuvers.

The second question I was asked to address is the following:

2) Is it possible to determine in the sequence when Endres engages his radio to say "box him in"--relative to his position on the roadway?

During the investigation into this crash event, it was determined that Officer Endres used his radio in Cruiser # 24 to say, "Box this guy in," a few seconds prior to the crash. After reviewing Officer Endres' AXON body camera footage, he can be seen utilizing his microphone in his Cruiser at the 21:50:10 to the 21:50:12 second mark of the video. At this time, the exterior sign of the Insurance Leader business, located at 1237 Elmwood Avenue is visible to the south of the Cruiser.



From this point, Officer Endres is over 175 feet north of his collision with the stop sign post. Officer Endres' AXON body camera footage also captures the approximate time of his collision with the stop sign post at the 21:50:16 second mark. Based on this analysis, the time from the Officer Endres' radio transmission of "Box this guy in," to his collision with the stop sign post was determined to be approximately 4 to 5 seconds.



A review of Officer McParlin's actions were also examined as part of this investigation. Using the surveillance video from the Advanced Telesystems Group Inc. business, it was determined that Officer McParlin began to pull out of Bissell Street eastbound onto Elmwood Avenue and started into the intersection at the video time stamp of 5:50:04. Officer McParlin's Cruiser can be seen moving into the intersection and then stopping while Officer Diaz's Cruiser continued south past Bissell Street. Once Officer Diaz's Cruiser passed, Officer McParlin began to pull out of Bissell Street and turned north onto Elmwood Avenue. Based on this timing and Officer McParlin fully crossing the southbound lane of Elmwood Avenue, it was determined that Officer McParlin started into the intersection before Officer Endres' radio transmission, and made no attempt to "box in" the approaching Yamaha Scooter. The figure below depicts Officer McParlin's Cruiser continuing into the intersection once Officer Diaz's Cruiser safely passed. Officer Endres' Cruiser would then strike the stop sign approximately six (6) seconds later at the video time stamp of 5:50:10.



Time Stamp 5:50:04 (Not synched to Office Endres' AXON Body Camera Time)

The above responses are my answers to the two additional questions posed to me. Should you or your office need any additional information or should you have any additional questions, please let me know at your earliest convenience.

Respectfully,

Lieutenant Jeffrey P. L'heureux #165

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CC: Assistant Attorney General Daniel C. Guglielmo