

## Virginia Multi-disciplinary Crash Investigation Team Technical Alert: Number 16

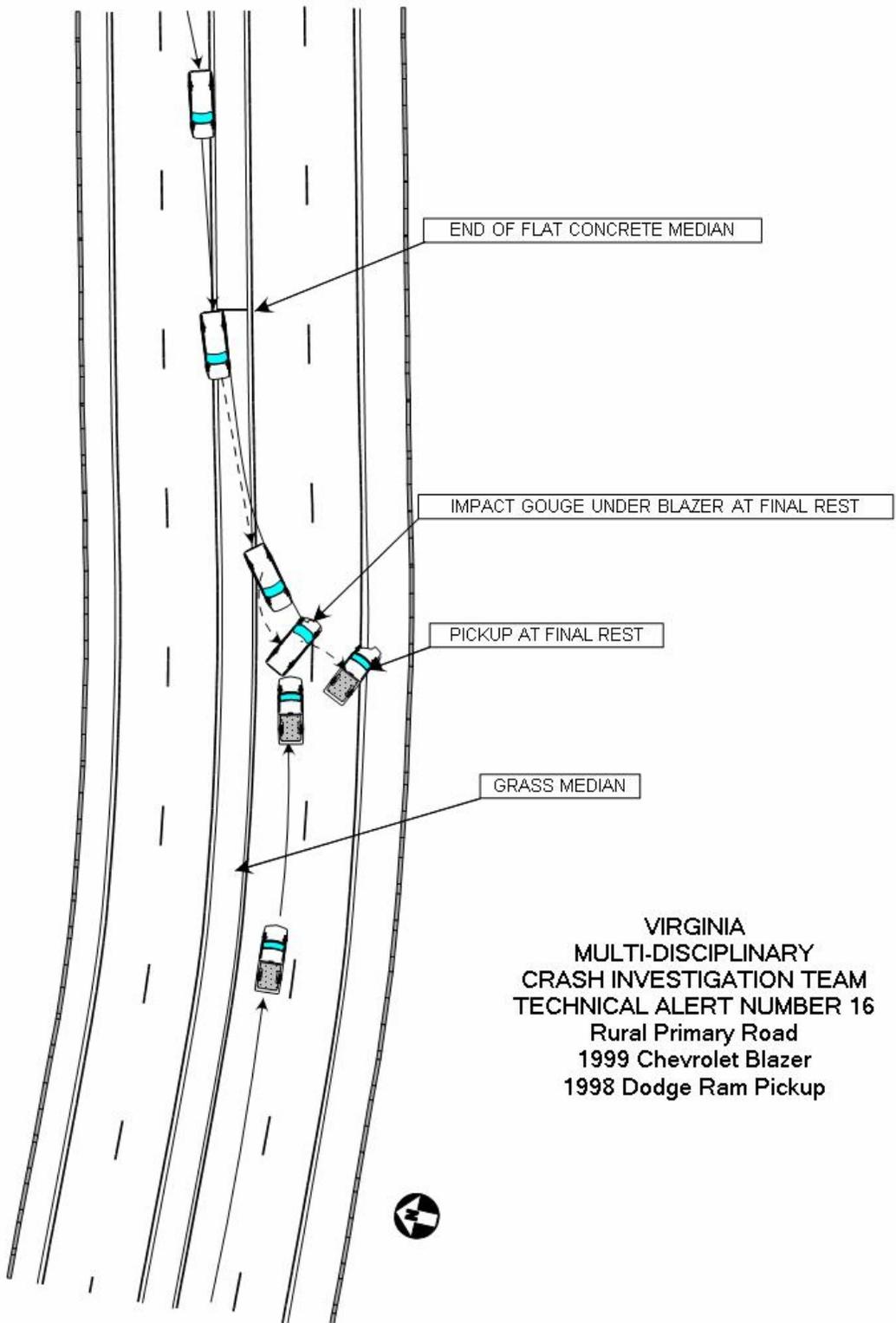
**Date: January, 2007**

**This Technical Alert addresses an angle collision that occurred between two vehicles traveling in opposite directions, resulting in two fatalities. The first was an infant who had been restrained in a rear facing infant seat placed in the center front seat of a pickup truck, in front of an active airbag system. The other was the unbelted at-fault driver, who was distracted with his cell phone while driving. Changes to traffic control and additional safety devices could improve safety in this area.**

On a clear, dry, fall evening at 8:00 p.m., a family of six was headed west in the left lane of a rural, four lane divided primary highway in a 1998 Dodge 1500 Extended Cab pickup truck. The asphalt paved highway is separated by a concrete curbed and grass median. The median is approximately 6 feet wide at the crash site. The height of the curb is five inches. The highway is on a slight upgrade and curves to the right, then intersects with a secondary route which is controlled by a traffic signal.

All the occupants in the pickup were restrained. The 23 year old driver was accompanied in the right front seat by his 27 year old wife, and both wore lap/shoulder belts. In the center front seat, their four month old daughter was secured in a rear facing infant seat designed for children between 5 and 22 pounds. Their three sons, ages 2, 4 and 9 years, sat in the back bench seat of the cab. Two wore the lap/shoulder restraints designed for their seats and the child seated in the center wore a lap belt designated for his seating position.

A lone 24 year old driver was traveling east in the left lane on the same highway in a 1999 Chevrolet Blazer. He was unrestrained and was using his cell phone, apparently to either read or send a text message. While he was distracted with the phone, his left tires began to bump against the raised curb of the median separating the opposing lanes of traffic. He continued forward for approximately 45 feet without any evidence of



VIRGINIA  
MULTI-DISCIPLINARY  
CRASH INVESTIGATION TEAM  
TECHNICAL ALERT NUMBER 16  
Rural Primary Road  
1999 Chevrolet Blazer  
1998 Dodge Ram Pickup

braking, when his SUV mounted the five inch concrete curb. The SUV crossed the median and entered the westbound lanes at an attitude of approximately 30 degrees and struck the right front corner of the pickup with its full front. The two vehicles slammed into one another, crushing the engine compartments back toward their respective occupant areas. This induced buckling type damage to the vehicles' roofs and sides, jamming the doors. The entire front end of the Blazer was crushed over 3.75 feet on the left and over 2 feet on the right. The Dodge pickup suffered the most damage to the driver's side, which was crushed inward over 2.5 feet. This caused the driver's door to buckle outward and the driver's seat to twist toward the window. The right front collapsed backward just over one foot. After the vehicles reached maximum engagement in the westbound left lane, they separated. The pickup came to rest in the right travel lane approximately 40 degrees to the right of its' original direction, facing southwest, with its right front wheel on the paved shoulder. The SUV spun counterclockwise approximately 110 degrees and came to rest also facing southwest in the left lane for westbound traffic with its right front wheel on the dashed lane line. A gouge mark from the impact was located in the left lane beneath the SUV.

The SUV operator had his license suspended for almost a year prior to the crash; however, he continued to drive. The suspension was based on failing to complete a required Driver Improvement Clinic and failure to pay fines for a series of convictions. Within the 15 months prior to this crash, he had been convicted three times of speeding. He had also been convicted of failing to obey highway markings, operating an uninspected vehicle, safety belt violations (twice), and driving with a suspended license. This pattern of behavior indicates that the SUV driver was a risk taker, with little concern for breaking the laws of the Commonwealth and an apparent disregard for any consequences that might follow.

According to family members, this driver had just received a text message on his cell phone and was either reading it or responding to it when he crossed the median. Talking on a cell phone, once a call is in process, requires little visual effort or eye-hand coordination. When text messaging, however, the operator has to scan the message and/or locate and press various small buttons on the phone. These actions require the driver to take his eyes off the roadway. They also demand a higher level of mental

attention and effort and consequently are more distracting than solely talking on a cell phone while driving.

There was no physical evidence to indicate that the SUV driver ever braked after initially striking the median curb or prior to the collision. This vehicle was equipped with front seat airbags, which deployed. Since the SUV driver was not wearing the lap/shoulder restraint, he was thrown forward into the dash area and the deploying airbag. He died at the scene from internal chest injuries, including rupture of a major blood vessel to the heart. His cell phone was still clutched in his hand in the open position. Toxicology tests revealed that he had no alcohol or drugs in his system at the time of the crash.



*Photo 1: Cell phone in deceased driver's hand at the scene of the crash.*

The pickup driver was licensed to drive commercial motor vehicles in a neighboring state, and his record did not show any convictions in that state. However, he had been convicted of speeding twice in Virginia, once in 2004 and once in 2006. In the 2004 citation, he was also convicted for a safety belt violation. He was wearing a safety belt on the evening of this crash, a factor that prevented more serious injury and probably saved his life. This driver was injured when the dash and floor pan of the pickup were pushed into his occupant space. However, after the crash, he was able to squeeze out

from behind the steering wheel and exit the vehicle on his own. His three young sons were restrained in the back seat and remained in their seats. One had a tooth knocked out and another bumped his head, a minor injury. The children's mother, in the right front seat, also suffered only minor bruising.

The four month old baby in the pickup was not as fortunate as the other occupants. A warning label was sewn into the padded cover of her infant seat, located so that it would be right next to the infant's head when she was placed into the seat, advising users of the danger of placing the seat in front of an airbag system. Additionally, a similar warning was sewn into the sun visors on the pickup. Despite these warnings, the child's parents placed her in the center front seat, rear facing, with the back of her infant seat just inches away from where a deploying airbag could emerge. During the collision, the bag pushed out the dash covering and expanded in a fraction of a second. This rapid burst hit the infant seat with great force, cracking the back of the seat and pushing it and the infant into the pickup's seatback. The baby suffered head injuries and died the following day at a nearby hospital.

The Chief of Police indicated that there have been numerous crashes on this section of roadway in the past five years. East of the crash site, the roadway traverses two bridges. A concrete barrier replaces the grass median for this segment of road and continues for a short distance beyond the second bridge. After that, the barriers give way to a curbed concrete median and then to the curbed grassy median present at the crash site. In order to improve safety on this section of roadway, the Town Manager contacted the Virginia Department of Transportation (VDOT) by letter to request that the concrete barrier be extended to the secondary route intersection. In discussing the accident history with VDOT personnel, we were informed that they are currently conducting a safety review of this section of roadway. Some of the issues being reviewed include reduction of the speed limit and a cost analysis of the installation of guardrail and/or concrete barrier.

While roadway improvements may provide forgiveness factors for drivers who err and run off the road, they do not solve the problems of distracted driving and incorrect use of child safety seats. These problems are the result of human choices, made either through lack of knowledge or disregard for the potential tragedy that may follow.