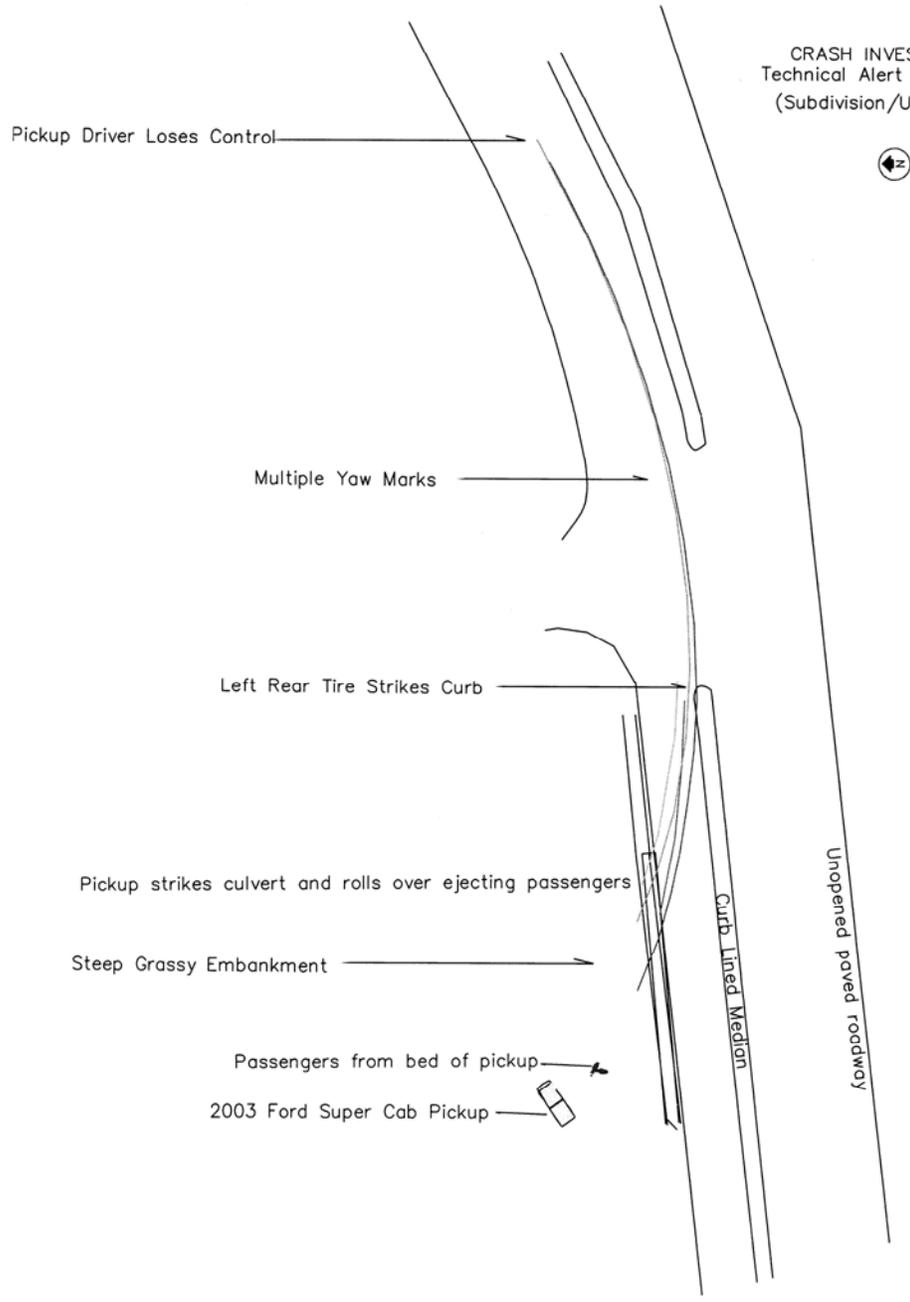


Crash Investigation Team Technical Alert Number 13

Date: July, 2004

At 11:00 p.m. on a clear, dry Saturday evening in March, a 2003 Ford F-250 super cab pick-up truck was traveling west on a two lane, divided private road. The unmarked roadway, which was still under construction and not yet open to the public, is located in a rural but heavily populated subdivision where many new homes are under construction. When opened, the asphalt paved roadway will be a four lane highway incorporated within the state's secondary roadway system and it will be appropriately marked and signed with a 25 mph posted speed limit. At the time of the crash, the roadway was unmarked and no speed limit was posted. Concrete sidewalks and curb/gutters border the pavement on both sides. A raised, grassy median 10 feet wide separates the two directions of travel. The roadway originates on the eastern terminus at a cul-de-sac and consists of several long, moderately sharp curves approaching the crash site. The roadway follows the natural contour of the land and westbound traffic ascends a gentle grade. Bordering the north side of the pavement is a 25-foot embankment that drops off abruptly at the sidewalk's edge. At the foot of the embankment, a small creek and swamp lie adjacent to a concrete culvert. No ambient lighting existed within this area at the time of the crash.

CRASH INVESTIGATION TEAM
Technical Alert Number 13-2004
(Subdivision/Unopened Street)



The pick-up was driven by an unbelted and unlicensed 15-year-old male who lived with his parents about a mile away. He was somewhat familiar with the vehicle and the area but not this roadway. The pick-up was properly inspected and licensed to the driver's father and mother. The truck was in excellent condition with no defects. The night of the crash, two male friends, ages 16 and 17-years-old rode (unrestrained) in the bed of the pick-up. All three teens had just left the driver's home and were en route to a convenience store where they planned to purchase snacks. Their intent was to drive back to the driver's home and sleep over.



Photo 1. View looking east from where the pick-up was traveling. It had been driven about .3 mile on this new, unopened roadway. Due to its' high speed (calculated at about 90 mph), the pick-up began to yaw on the pavement at this location.

After the Ford pick-up had traveled about .3 mile on the unopened roadway and negotiated a slight upgrade and curve to the driver's left without any apparent difficulty, it entered a short straight, tangent section of alignment. While traveling within the earlier curve and along the tangent section of roadway, the driver accelerated the pick-up to a high rate of speed. When the pick-up entered a long, moderately sharp curve to the right,

it began to yaw on the pavement, causing a clockwise rotation. The pick-up continued to yaw about 260 feet while heading toward the median until its' left rear tire struck and mounted the six inch high curb. The left wheel diagonally crossed the median a distance of about 13 feet while the remaining three tires were side-scuffing on the pavement. At the point of impact, the median is constructed to allow an intersection/crossover section. The collision occurred on the nose of the curbing, where the crossover ended and the median structure resumed, causing the left rear tire to separate from the rim and simultaneously go flat. The truck's two left tires incurred an excessive weight transfer while the pick-up was yawing and being steered to the right. This, compounded by the impact with the median curb, caused the left front tire to separate from its' bead and go flat while the wheel rim began to scar the pavement. The truck crossed the westbound lane diagonally, leaving four distinct scuff/yaw marks on the roadway. After traveling 102 feet across the pavement, the pick-up struck the raised curb bordering the right side of the westbound lane with its left front tire/wheel. Mounting the curb, it traveled about 25 feet across a short grassy section of shoulder and the bordering sidewalk while still rotating clockwise. Beside the sidewalk, the grassy berm slopes downward and away from the pavement. While the pick-up was still rotating and sliding northwest with most of its weight on the left wheels, it began to dig into the soft sod, tripping the vehicle. This action caused the pick-up to roll over onto its left side, down the steep embankment. As the truck was rolling, the two unbelted teenagers riding in the open bed were ejected onto the embankment and under the overturning vehicle. They came to rest on the embankment several feet apart, 46 feet from the sidewalk. The truck completed one full roll and came to rest on its wheels, approximately 30 feet beyond the ejected passengers. It faced east at the bottom of the embankment in a small creek. It had rotated about 180 degrees and traveled nearly 440 feet from where it first began leaving tire marks on the pavement.



Photo 2. View looking west, the direction that the pick-up was originally traveling. Note the new roadway construction. The pick-up was out-of-control at this point as it yawed toward the median. It ultimately ran off the road to the right at about the 2 o'clock position in the photo.

Both ejected passengers died at the scene from blunt impact chest injuries after being crushed between the pick-up and ground. The unbelted 15-year-old driver was also ejected as the pick-up rolled over. He was thrown through the driver's side window and landed in the creek bed only a few feet away from the truck. He sustained numerous injuries throughout his body; however, his most severe injuries were fractures to both legs. After the crash, the driver tried to get back into the pick-up to get his cell phone to call for help. He told the investigating deputy he had to use both hands to straighten his legs out in order to move. He then crawled back to the truck with great difficulty and in great pain, but he was unsuccessful in opening either door on the driver's side. He was not able to stand up and crawl into the truck because of his injuries. So he began to shout repeatedly for help. He could not locate his friends or determine their conditions due to the darkness.

Several nearby residents in the area heard the crash and then later heard cries for help. These neighbors did not know where the yells were coming from, but called authorities for assistance. County Deputies were dispatched and arrived in the area within minutes and, along with citizens, began searching the vicinity. The vehicle and victims were located about 29 minutes after the first call had been placed. Emergency fire and rescue personnel arrived and attended to the victims. The two deceased teens were taken to the morgue and the severely injured driver was taken to a hospital for treatment.



Photo 3. View looking southeast from the final rest of the pick-up below the roadway. The two ejected passengers came to rest atop the embankment and the ejected driver landed beside the truck in the creek.

The driver was interviewed by the investigating deputy both at the scene and at the hospital. On both occasions, he was open and forthcoming about the events surrounding the crash and his history as a driver. He and his mother both confirmed that even though he had failed the written test at DMV for a learners permit, he was allowed to drive the truck on occasion when accompanied by his mother. On the night of the

crash, however, she had given her keys to the 17-year-old, who was the only one of the three teens licensed to drive, so that the three could go to the convenience store to purchase snacks. They had been to a school sponsored function earlier that night and the 17-year-old had driven his own car. Once they got inside the pick-up, the 17-year-old could not maneuver the large truck out of a parallel parking spot in the neighborhood, so the 15-year-old got behind the wheel and backed the truck out. Once out of the parking space, the 15-year-old continued to drive to the store. At this point, the 17-year-old was in the right front and the 16-year-old was on the rear bench seat. The 17-year-old suggested that they drive to a nearby “abandoned” road (the crash site). While in transit, the two older teens climbed from the front and rear seats, through the back window, and got into the pick-up’s cargo bed. The two passengers sat forward of the wheel well humps, facing each other. The driver said that he sped up as he began to maneuver along the new road. After entering the curve, he realized that he was traveling too fast and losing control of the vehicle. Although he continued to steer the truck as it side-slipped along the pavement, he never took his foot off the accelerator pedal. He did not attempt to brake. As the truck was speeding toward the median curb where the first collision occurred, the driver said he was so scared that he “closed his eyes” while hanging onto the steering wheel. When asked how fast he thought he was driving when he lost control, the 15-year-old said, “it had to be 75 or 80 miles per hour”. Based on the physical evidence at the scene, the pick-up’s left front tire-yaw mark indicated a speed of about 90 mph. This measurement was taken near the beginning of the tire mark, 362 feet before the pick-up ran off the road.

The 15-year-old driver in this case pled guilty to two counts of involuntary manslaughter and one count of reckless driving. The disposition of the case is that it will be continued until his 19th birthday for dismissal on the involuntary manslaughter charges and a conviction on the reckless driving under the following conditions: mandatory monthly attendance at the new driver licensing ceremony, supervised probation, community service at the responding fire/rescue company, no contact with the decedent’s families, and no attendance at the same school as the decedent’s siblings. These conditions exist until the 19th birthday and any violation of the conditions are grounds for automatic six-month committal to the Department of Juvenile Justice.



Photo 4. View of the damaged 2003 Ford F-250 Super Cab pick-up. Most damage occurred to the pick-up's front during rollover. The interior was undamaged. Had the 15-year-old driver been belted he would not have been ejected and likely would have sustained little or no injury.

This tragic crash exemplifies the horrors associated with high speed, reckless driving and illustrates the issues that often underline the high crash/fatality rates for teens as compared to the rest of the driving population.

First, driving is a learned skill and young drivers are inexperienced. Recognition of that fact is built into the process by which the Commonwealth licenses teen drivers. A learner's permit may be issued to a Virginia resident at age 15 years, 6 months and a driver's license at 16 years, 3 months. An applicant must also have passed a written knowledge test before they first get behind the wheel. This lays the foundation for learning the requisite skills of driving, within a context that emphasizes safety, respect for laws, the driving environment, and the machine they are operating. In this case, the driver's mother allowed him to drive on public roads even though he had failed the written test for his learner's permit. Although this parent may have had only good intentions, wanting to give her son as much practice as possible operating the vehicle, she

was actually undermining his ability to make good judgments about driving within the larger context. That is, with her sanction, he learned that it is acceptable to ignore some laws. Through her actions, her son could also infer that driving is more about being able to perform the physical actions, without reference to making judgments as to when and where it is appropriate to drive. Safe driving begins with making the right decision about whether or not a person should get in the vehicle and turn the key. To focus first on the act of driving and then later on the judgment aspects gives inexperienced drivers an inverted hierarchy of priorities for making decisions about driving.

Second, immaturity and risk-taking behavior are also factors that affect the safety of teens. This crash is an example of how impulsiveness, peer pressure, speeding, and not wearing a seatbelt can result in life destroying consequences. Males are especially prone to these behaviors, and even “good kids” can get caught up in the excitement of the moment. The young men involved in this crash were good students, well liked, and not considered troublemakers. They had not been abusing alcohol or drugs. They simply made high risk, impulsive decisions that left two dead and one physically and psychologically marked for life. Again, the licensing laws in the Commonwealth encourage the development of maturity along with judgment and performance skills by requiring specific course work, certain levels of practice driving under adult supervision, and by restricting driving in conditions that increase the likelihood of high risk behaviors.

The third safety issue for teen drivers illustrated in this crash is driving at night with other teens in the vehicle. Passengers can distract drivers and exert peer influence. This may negatively affect the novice operator’s performance behind the wheel and encourage risky behaviors described in this case. This concern led to legislation that placed legal restrictions on the number of underage passengers a teen driver may transport, as well as restrictions on driving times.

The 17-year-old killed in this crash could have legally driven his two friends to the store. But licensed drivers younger than 17 are permitted only one passenger under 18. Even if the Ford driver had been 16 and licensed, he could have legally taken only one of his friends with him. Inexperience, risk taking, and exposure to a situation that compounded those factors all played a role in this crash.

State legislators, judges, law enforcement officers, educators, Department of Education, Department of Motor Vehicles and others have made extensive effort to promote highway safety, including the adoption and implementation of a graduated licensing law. The Team encourages continuation of these efforts. However, classroom and the courtroom are not enough. Parents must educate themselves regarding the basis for laws regulating their young drivers and they must teach respect for the laws and for safety in general. By showing good judgment in their own driving and with the requirements they place on their teen drivers, they can teach by example as well as through authority. (*See Crash Investigation Team Special Report Number 14, entitled Report on Young Drivers Involved in Fatal Crashes for additional details*).

When the graduated driver-licensing bill became effective on July 1, 2001, the General Assembly directed the Commonwealth to summarize crash rates and injuries/fatalities associated with teen drivers involved in traffic mishaps. The purpose of the law's passage was to promote highway safety among teen drivers (and increase awareness with the teens parents/guardians) and to hopefully reduce the highest single crash rate of any Virginia age group.

TEEN DRIVER FATALITY STATISTICS

	7/1/00 to 6/30/2001	7/1/01 to 6/30/2002	7/1/02 to 6/30/2003	7/1/03 to 6/30/2004
# FATAL CRASHES WITH TEEN DRIVERS*	123	133	144	115
# FATALITIES	138	156	163	134
# TEEN DRIVERS IN FATAL CRASHES BY AGE				
15 YEARS	4	2	1	1
16 YEARS	21	29	24	20
17 YEARS	19	28	36	37
18 YEARS	41	34	44	20
19 YEARS	39	45	42	40
TOTAL	124	138	147	118

**Crashes where at least one of the drivers in a fatal crash was between the ages of 15 through 19-year-old.*

The reduction in the number of 16-year-old drivers involved in fatal crashes and the reduction in total fatal crashes involving drivers 16 through 19-years-old over the last reporting period is encouraging. The crash statistics involving teen drivers will continue to be monitored to determine if any clear trends are occurring.

One trend continues, however. The most common causal factors in the teen crashes for all three study periods were excessive speed and driver inattention/distraction. The most common type of fatal crash was a run off the road incident and most occurred during the hours between 4:00 p.m. and midnight. Crash data indicates that in nearly 82% of fatal traffic crashes involving teens, the teen driver is at fault. The young driver involved in this report's crash exhibited the same characteristics associated with the main causes of other teen related crashes. While it is still too early to determine if the graduated teen licensing law's passage has had an effect on teen crash rates it appears that, at least during the most recent study period, the number of fatal crashes and fatalities have reduced. Teen crash data continues to be analyzed.