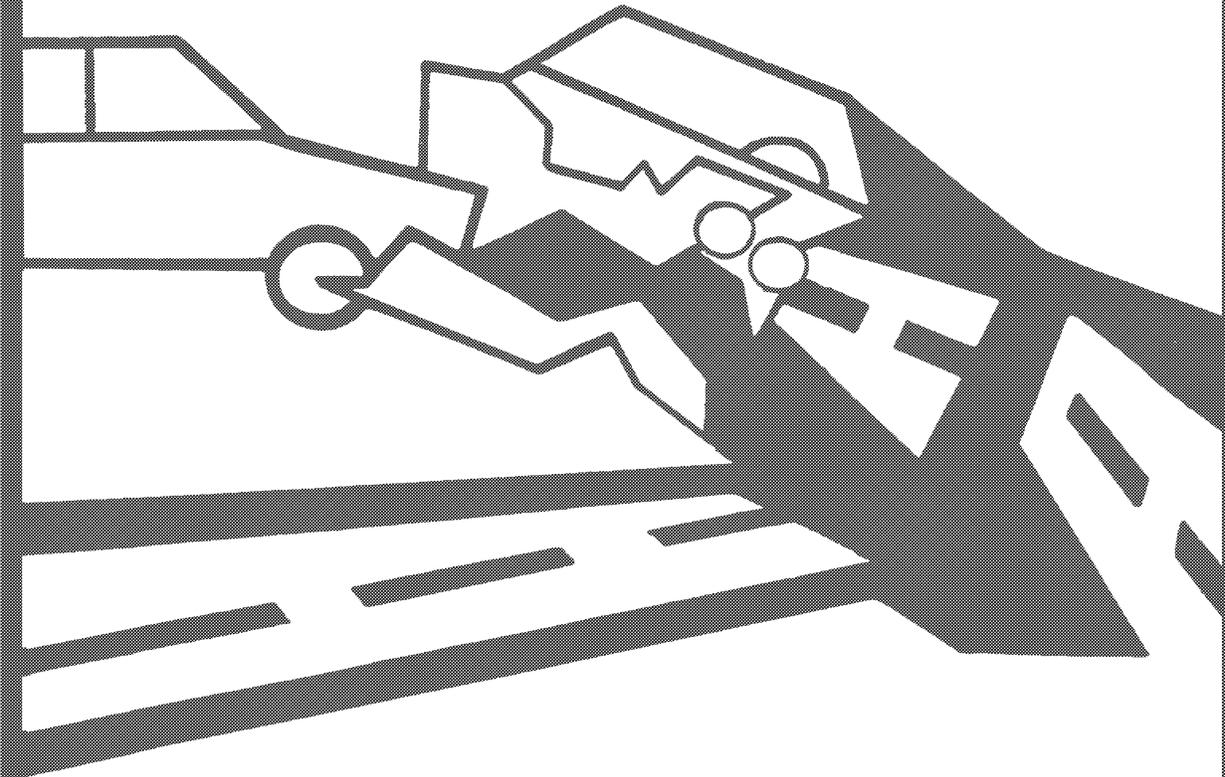


Virginia Crash Investigation Team



Driver Inattention and Driver Distraction Study



TRANSPORTATION SAFETY TRAINING CENTER

Virginia Commonwealth University

Virginia Crash Investigation Team

The Virginia Crash Investigation Team was formed in 1971 by the Highway Safety Division with the cooperation and support of the Virginia Departments of State Police and Transportation and Virginia Commonwealth University. Team members include a Virginia State Trooper, a Highway Engineer, and a Psychologist, with advisory assistance from medical, engineering, or other personnel when necessary. The Team has the responsibility for determining the circumstances and probable causes of various transportation crashes. This information and the subsequent interpretations are intended to assist in the understanding and prevention of similar tragedies.

In an effort to produce the most objective, unbiased product possible, the Team investigates the human, mechanical, and environmental factors using a variety of techniques. Such techniques include, but are not limited to, personal interviews, on-site examinations, and vehicle inspections. Upon completion of this data-gathering phase of the investigation, the Team then determines conclusions and makes appropriate recommendations. These conclusions and recommendations are forwarded to federal, state and/or local entities and to individuals who may be concerned with making, implementing, or influencing safety policies, laws, and standards. The primary emphasis of these reports is always placed on understanding the causes and specific characteristics of each case with an eye toward suggesting preventive measures.

We encourage the use of this report by the appropriate officials/individuals as a guide when evaluating the effectiveness of the existing transportation safety programs in their areas as well as when assessing the need for additional programs. In addition, we welcome your comments regarding this or any other Virginia Crash Investigation Team Report.

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** The conclusions and recommendations contained in this report are the opinions of the Crash Investigation Team and are not necessarily those of Virginia Commonwealth University.

**Virginia Commonwealth University
Transportation Safety Training Center
Crash Investigation Team**

Special Report Number 15—December 2001

ABSTRACT

This Special Report, entitled “Driver Inattention and Driver Distraction Study”, examines Virginia crash data involving the primary cause of traffic crashes: driver error. It features various aspects of driver distraction and cites the relative risk of drivers not devoting their full attention to their driving task. An overview of crash statistics is included, using data from calendar years 1998 through 2000, plus the first six months of 2001. The report provides case study examinations of six crashes that occurred in the Commonwealth during 2001 and a table of the 30 crashes brought to the attention of the Crash Investigation Team by law enforcement agencies. National information citing the dangers and risks associated with driver distraction, especially cell phone use, is discussed.

This Special Report clearly demonstrates the need for motorists to constantly devote their full attention to their driving task. While it may be common for drivers to simultaneously do other things while they are operating a vehicle, some non-driving operations are more dangerous than others and create a higher risk for an incident occurring. The purpose of this report is to increase awareness on the part of Virginia drivers to the importance of driving with more vigilance and attentiveness.

One impetus for the development of this study was concern over the effects of cellular phone use while driving. Parts of the report address safety risks associated with this type of distraction. Related information is included in the case studies and tables.

Under present conditions, the true numbers and severity of highway crashes caused by driver distraction is underreported. This is primarily due to the inadequacy of the current crash report form and consequently law enforcement officers not including the needed data on the form. The findings in this Special Report suggest that further research and analysis are needed before possible remedial changes, such as legislative action, can be made. In the interim, however, it is recommended that the uniform police crash report be changed to capture specific driver distraction information. Also, law enforcement officers, when they strongly suspect driver distraction caused a crash, are encouraged to enter the specific distraction on the report for recording purposes.

Appreciation is extended to all Virginia law enforcement agencies for their participation in this project.

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INTRODUCTION

According to the National Highway Traffic Safety Administration (NHTSA), driver distraction is a factor in approximately 20 to 30 percent of all vehicle crashes. Driver inattention, cited in one specific study by NHTSA, comprised nearly 23% of unsafe driving acts in serious traffic crashes. In about 17% of these crashes, driver inattention was deemed the primary or sole causal factor. (Other driver related factors were excessive speed, 18.7%; alcohol impairment, 18.2%; perceptual errors, 15.1%; decision errors, 10.1%; and incapacitation, 6.4%).

Researchers at the University of Michigan Transportation Research Institute (UMTRI) have concluded that driver distraction can be both physical and cognitive. Distractions also can occur both inside and outside of the vehicle. Distractions from inside the vehicle are myriad: e.g., spilling coffee, tuning the radio, eating/drinking, answering a cell phone, etc., and cause about 9% of crashes involved in their studies. Distractions outside the vehicle include such things as drivers looking at previous crash situations, highway construction, sightseeing, etc. Cognitive distractions include aggression, fatigue, and mental distraction.

But what exactly is distraction, and what makes driving while distracted so dangerous? Simply put, any driver involvement that takes his or her attention away from their intended driving task is a distraction. The more complex and longer the duration of the distraction, the higher the risk of crash involvement. Traffic conditions and highway conditions compound this problem. For instance, a momentary glance at the radio dial on a straight, level highway when no other vehicles are around will have a lower crash potential than doing the same thing within heavy traffic conditions or going around a curve. The Crash Investigation Team has investigated numerous distraction crashes and has observed many unsafe driving acts over the past 30 years. Members have witnessed numerous driver distractions, such as arguing or conversing with passengers, drivers applying make-up, shaving, reading newspapers, maps, and even books, or drivers changing CD's, and talking on cell phones. The list is practically endless. And who are the drivers that participate in these distracting behaviors while driving? Virtually all

drivers do, although some may say that the act was executed “safely” if it did not result in a mishap.

In an attempt to isolate the most common driver distractions occurring in traffic crashes, the American Automobile Association Foundation for Traffic Safety commissioned a recent study through the University of North Carolina Highway Safety Research Center. Their study revealed that 284,000 distracted drivers are involved in serious crashes each year. Most drivers were distracted by: seeing something outside the vehicle (29.4%), adjusting a radio or CD player (11.4%), talking with other occupants (10.9%), adjusting climate control (2.8%), eating/drinking (1.7%), using a cell phone (1.5%), and smoking (0.9%). Interestingly, drivers under 20 were more likely to be distracted by tuning the radio or changing CD’s while drivers aged 20-29 seemed more distracted by other passengers. Motorists over 65 were more distracted by objects or events happening outside the vehicle.

Virginia traffic crash data is incomplete when attempting to isolate driver distraction cases. This is because the current police crash report form does not contain a specific code space for distractions. Only rarely does a law enforcement officer note on the report form within the “accident description” block what the driver was actually doing at the time of the crash. Based on data collected by the Crash Team and contained in this Special Report, the one category that most likely involves a distraction is coded under driver’s action as “driver inattention”. Although this has been described as a “catch all” category, one used by crash investigators when the officer does not know specifically what the driver was doing just prior to the crash, its incident rate has been increasing over the last several years.

In 1978, the first year inattention appeared on Virginia’s crash report, driver inattention contributed to 7% of all crashes and 6% of fatal crashes. This represented the second most frequent causal factor for all crashes and the third for fatal crashes. Over the next two decades, driver inattention climbed to 13% of all crashes and nearly 16% of fatal crashes. Today, it is the top ranked cause of all crashes and the second ranked cause of fatal crashes. However, driver inattention, unless it is specifically described on the report form, does not tell researchers and analysts what distraction, if any, occurred. Of the 30 known distraction cases examined by the Team, 19 crash reports (63%) were coded

as driver inattention. Although this is an extremely small sample, it suggests that a majority of distraction crashes, whether physical or cognitive, are reported as driver inattention.

Cellular Phones and Driver Distraction

In today's modern vehicles, which are equipped with many more technical devices than their older counterparts, the likelihood of driver distraction from inside the vehicle is perhaps more common than 25 years ago. The electronic device that is singled out the most as being potentially unsafe is the wireless telephone. According to a recent National Safety Council study, 3% of drivers, or about 500,000 drivers, are using cell phones at any given time. A NHTSA survey revealed that about 54% of drivers reported having a cell phone in their car and three-fourths of them talk on the phone while driving. In a public opinion survey conducted by DRIVE SMART Virginia, cell phone use was rated the fourth most dangerous driving behavior, behind speeding, cutting people off and tailgating. Fifty-four percent of the survey respondents reported talking on the phone while driving. Twenty-three percent of the same respondents cited cellular phone use as the most dangerous driving behavior occurring on the highways.

Research on the effects of cell phone use on driving behavior and crash risk has increased significantly over the past 10 years. Many cite difficulty in assessing the true level of involvement of such devices due to problems in reporting, a concern also found in Virginia. Other studies do tend to support the popular notion that cell phone use is a distraction for drivers, influencing their ability to perform driving tasks competently and safely. They argue that the "cognitive resources" required to carry on a phone conversation are the same as those required for driving. Thus, when the two tasks are performed simultaneously, a cognitive load is placed on the driver, which may impact on performance of either or both activities. These studies repeatedly show that such behavior reduces awareness and driver reaction times, especially as they relate to braking. Thus the driver's reduced ability to assess and respond to unexpected situations increases risk. Crash risk is reported to increase from 34% to 400% compared to drivers not using mobile phones, depending on the study. One researcher compared this increase in risk to be similar to the risk associated with that of driving with a blood alcohol level at the legal limit. Another researcher has concluded that using cell phones and other electronic

devices while driving is two to five times more dangerous than changing the radio station or eating. While it is argued that risk is increased, it is difficult to document the actual incident of crashes due to this increase in risk.

Current cell phones come in two varieties: handheld and hands-free. It would seem that a hands-free phone would be safer while driving because of the obvious elimination of physically handling the device. However, due to the cognitive activity of carrying on a phone conversation while driving, using a hands-free device as opposed to a driver holding a phone up against their ear does not make driving appreciably safer. A University of Utah study, along with other research, found that hands-free phones are not likely to significantly reduce the distraction level associated with cell phone use. NHTSA discovered that conversation appears to be the most associated with crashes reviewed rather than dialing.

At least 23 other states, as well as the Commonwealth, have attempted to pass legislation governing the use of cell phones. At present, only New York has limited the legal use of cell phones while driving to only those that are hands-free. As will be discussed later, there is insufficient crash evidence to warrant this type of restriction within the Commonwealth at the present time.

Summary and Recommendations

In an effort to determine the extent of the driver distraction problem in Virginia, the Crash Team analyzed fatal crash reports from 1998 through the first six months of 2001. The conclusions from this analysis are presented in tables following this section. In addition, the Team requested information from all law enforcement agencies within the Commonwealth about any serious crash involving a known driver distraction that occurred between April 1 and October 31, 2001. The crash data included in this report describes six cases in depth and provides information on 24 additional crashes brought to the attention of the Team. Of the 30 known driver distraction cases, nine drivers were using cell phones, five were tuning a radio or changing a CD, four were preoccupied by passengers' actions/conversations, two were reaching for cigarettes and one each was looking at a map, purse, soda, pen, two-way radio, a crashed vehicle, flashlight, picking up trash, adjusting a sun visor, and an unknown object.

The Team compared Virginia's uniform traffic crash report with other states reports. After examining all 50 states and the District of Columbia's reports, it was noted that at least 38 jurisdictions have spaces on their forms for investigating officers to note driver inattention/distraction. Like the Commonwealth, 16 jurisdictions note inattention only, and 20 give the investigating officer a choice of driver inattention or driver distraction. Several of these states specify whether the distraction was inside or outside the vehicle, or whether the passenger caused the distraction. Others instruct the officer to write down in the narrative space what specific distraction occurred. Thirteen states have no choices for inattention or distraction on their crash reports. Minnesota and Oregon have recently added a category space for cell phone use. Since all states have a crash description or narrative space contained on the crash report, it is possible that some officers describe the distraction in this space. However, like Virginia, it is probable that the narrative entry is not coded and therefore not a part of the crash database. Therefore, if an entry is made, it must be manually tabulated. Table 4 compares all states crash report forms.

While there is little debate that driver distraction increases the risk of crash involvement, more information is needed before any remedial actions can be addressed. Therefore, the Crash Investigation Team recommends that the police crash report form be amended to include specific driver distraction categories. This will improve our ability to assess the impact of various types of distraction on highway safety. In the meantime, motorists must be made aware of the hazards of driving inattentively or while distracted.

Driver Inattention Fatal Crash Data Summary

The information summarized below reflects an analysis of 444 fatal crash reports occurring in the Commonwealth during 1998, 1999, 2000, and the first six months of 2001. All of these reports were coded by the investigating officers as having the driver's action noted as driver inattention. A more thorough breakdown of the individual characteristics associated with these crashes is noted in Tables 1 and 2.

1. From 1998 through the first six months of 2001, nearly 450 crashes resulting in 500 traffic deaths and 400 injuries occurred on the highways of the Commonwealth as a result of driver inattention and driver distraction.
2. Male drivers are more likely to be involved in inattention-related fatal crashes: 74% male, 26% female. They are over represented compared to the statewide proportion for male drivers involved in all crashes (57%) and fatal crashes (72%). Of the 5,034,297 licensed drivers in Virginia, 49% are male and 51% female. *
3. Nearly one-quarter of these fatal crashes included alcohol use and excessive speed: 22% alcohol involved and 18% above the posted speed limit. (This is higher than the statewide average of 15% for alcohol use but slightly lower than the 20% for excessive speed for drivers involved in fatal crashes).
4. The majority of fatal crashes involving driver inattention are non-collisions; i.e. run off the road crashes: 70% non-collision, 30% collision.
5. The majority of crashes occur on straight roadway alignment: 66% straight, 34% curve.
6. Exactly half of these crashes occur during times of darkness and half during light conditions: Daylight 50%, Darkness 50%.
7. Most of these crashes occur on state primary highways and the fewest on city streets; 40% primary, 27% interstate, 25% secondary and 8% city streets.
8. The most involved age group is 20-29 year old drivers with the least represented in the 60-69 year old age group. Both the 16-19 and 20-29 age groups are remarkably over represented in driver inattention crashes as compared to their licensure rates.

25% of drivers 20-29 years of age	vs.	17% of Virginia licensed drivers*
20% of drivers 30-39 years of age	vs.	22% of Virginia licensed drivers
16% of drivers 40-49 years of age	vs.	22% of Virginia licensed drivers
14% of drivers 50-59 years of age	vs.	17% of Virginia licensed drivers
11% of drivers 16-19 years of age	vs.	5% of Virginia licensed drivers
7% of drivers 70+above age group	vs.	8% of Virginia licensed drivers
6.6% of drivers 60-69 years of age	vs.	9% of Virginia licensed drivers

*Source: VA. Dept. of Motor Vehicles licensed drivers during 2000.

Table 1

Fatal Crash Data

	1998	1999	2000	2001(1st 6 mths.)	Totals
Total Number of Fatal Crash Reports Examined:	897	795	666	346	2,704
Number of Reports coded as "Driver Inattention":	157(18%)	90(11%)	123(18%)	74(21%)	444(16%)
Number of <u>Deaths</u> involved in "Driver Inattention" crashes:	185	99	127	80	491*
Number of <u>Injured</u> in crashes:	112	72	126	58	368*
Number of "Driver Distraction" crashes where the type of driver inattention was described:(either noted on driver condition box or in accident description)	32(20%)	20(22%)	24(20%)	19(26%)	95(21%)
Unknown:	125(80%)	70(78%)	99(80%)	55(74%)	349(79%)
Asleep/Fatigued:	27	15	21	14	77
Driver ill:	4	5	~~	1	10
CD Player:	~~	~~	~~	1	1
Avoid Animal:	~~	~~	~~	1	1
Looked Down:	~~	~~	1	~~	1
Delivery Mail:	~~	~~	1	~~	1
Bug in Eye:	1	~~	~~	~~	1
Being tailgated:	~~	~~	1	~~	1
Previous Crash:	~~	~~	~~	1	1
Flashlight:	~~	~~	~~	1	1

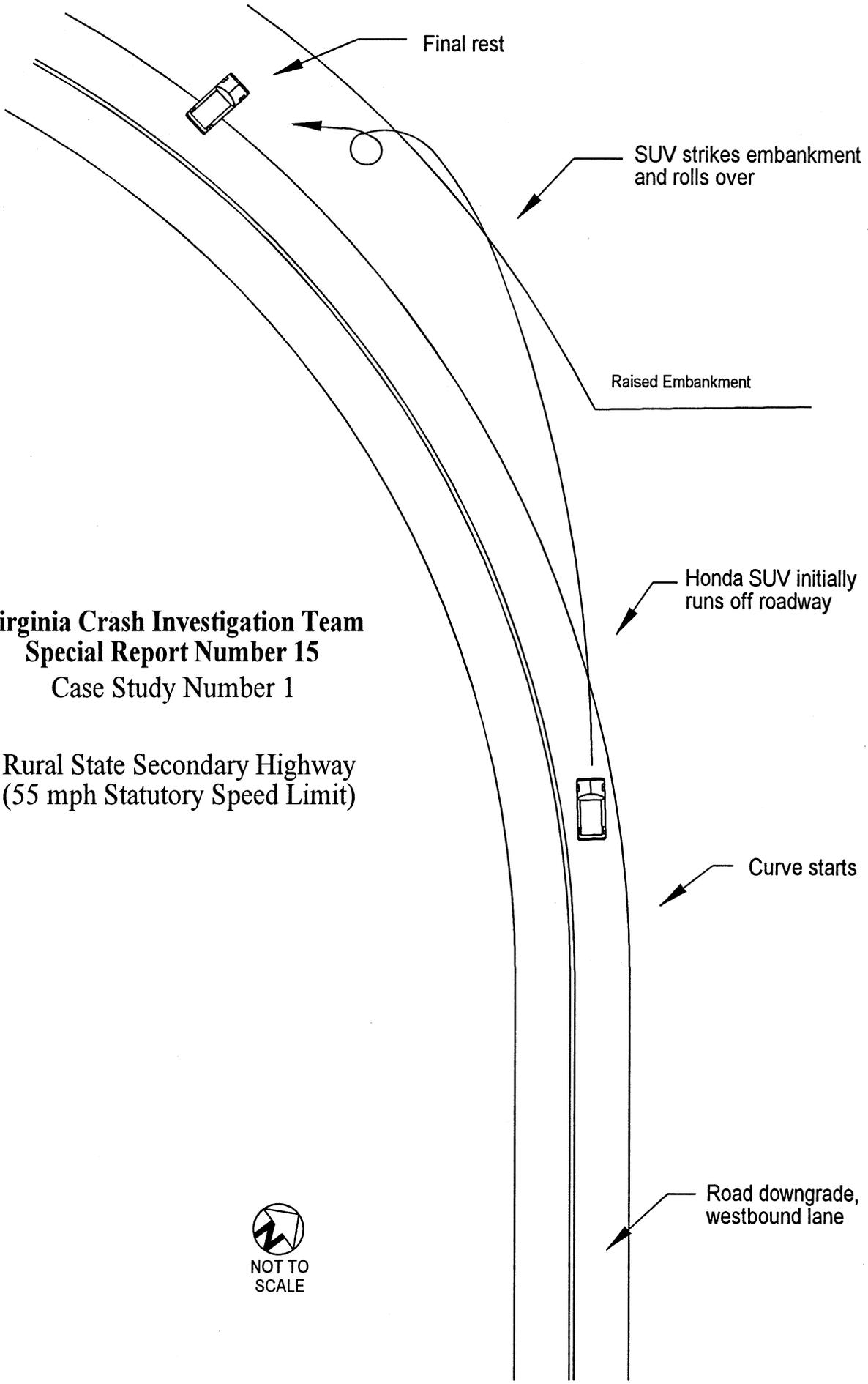
*The 15 deaths and 37 injuries occurring between April 1 and October 31, 2001 (the notification period of this study) raises the total number of known traffic deaths and injuries associated with driver inattention/distraction to 506 and 405 respectively.

Table 2

Driver Inattention/ Distraction Characteristics*

		1998	1999	2000	2001(1st 6 mths.)	Grand Totals
Total Crashes:		157	90	123	74	444
Light Conditions:	Daylight	67 (43%)	47 (52%)	69 (56%)	39 (53%)	222 (50%)
	Dark	90 (57%)	43 (48%)	54 (44%)	35 (47%)	222 (50%)
Highway Type:	Interstate	48 (31%)	18 (20%)	37 (30%)	16 (22%)	119 (27%)
	Primary	61 (39%)	29 (32%)	55 (43%)	31 (42%)	176 (40%)
	Secondary	32 (20%)	30 (33%)	26 (21%)	21 (28%)	109 (24%)
	City street	16 (10%)	13 (14%)	5 (.4%)	6 (8%)	40 (9%)
Alignment:	Straight	109 (69%)	53 (59%)	85 (69%)	45 (61%)	292 (66%)
	Curve	48 (31%)	37 (41%)	38 (31%)	29 (39%)	152 (34%)
Type of Crash:	Collision	71 (45%)	17 (19%)	27 (22%)	19 (26%)	134 (30%)
	Non-collis.	86 (55%)	73 (81%)	96 (78%)	55 (74%)	310 (70%)
Driver Age:	16-19	12 (8%)	6 (7%)	18 (15%)	12 (16%)	48 (11%)
	20-29	39 (25%)	23 (26%)	33 (27%)	17 (23%)	112 (25%)
	30-39	28 (18%)	13 (14%)	31 (25%)	18 (24%)	90 (20%)
	40-49	24 (15%)	14 (16%)	27 (22%)	5 (7%)	70 (16%)
	50-59	21 (13%)	19 (21%)	13 (11%)	10 (14%)	63 (14%)
	60-69	13 (8%)	5 (5%)	2 (-)	9 (12%)	29 (7%)
	70+	20 (13%)	10 (11%)	0 (-)	3 (4%)	33 (7%)
Driver Sex:	Male	116 (74%)	73 (81%)	90 (73%)	51 (69%)	330 (74%)
	Female	41 (26%)	17 (19%)	33 (27%)	23 (31%)	114 (26%)
Driver used Alcohol:		33 (21%)	18 (20%)	32 (26%)	15 (21%)	98 (22%)
Driver exceeded Speed Limit:		31 (20%)	17 (19%)	26 (21%)	7 (10%)	81 (18%)

*Source: Fatal Police Crash Reports (FR-300P)



**Virginia Crash Investigation Team
Special Report Number 15
Case Study Number 1**

Rural State Secondary Highway
(55 mph Statutory Speed Limit)



CASE STUDY NUMBER 1

Type of Crash:	Single vehicle, run off the road
Day, Time, Season:	Thursday, 11:40 p.m., Spring
Vehicle Involved:	1996 Honda Passport SUV
Roadway:	Rural, two lane undivided highway Statutory 55 mph speed limit
Occupant:	23 year old female driver, unbelted
Severity:	Minor injury, moderate property damage
Causal Factors:	Driver distraction: reaching for a pack of cigarettes while in a curve.

SUMMARY:

On a Thursday night at 11:40 p.m., a lone 23 year old female was driving her 1996 Honda Passport sport utility vehicle (SUV) west on a rural, dark, two lane secondary road. She was returning home from visiting her boyfriend's house where, earlier, an argument had ensued between the two. As she was nearing her home, she removed her cell phone from her purse and called her boyfriend. After a short conversation, they continued to argue over a domestic problem and she hung up on him. She then placed the phone down in the seat beside her and began to reach for a pack of cigarettes that was in her purse. While searching for them, she allowed her vehicle to run off the right edge of the road and onto a narrow grassy shoulder. Realizing that she was off the pavement, she braked in a hard manner and swerved to her left in an unsuccessful attempt to regain the road. The SUV ran off the road in a sharp curve to the left for westbound traffic and on a steep downgrade.

The right front corner of the vehicle struck a steep, 15 foot raised embankment, causing the SUV to rotate clockwise while simultaneously climbing the embankment. Due to the rotation and uneven terrain, the vehicle then began to rollover onto its left side and slide down the embankment. The unbelted driver was thrown around inside the vehicle as her SUV rolled one complete time and came to rest on its wheels, facing north at the edge of the pavement. She struck the steering wheel, roof area and left doorpost, receiving minor injuries. The total distance the SUV traveled from the time it left the road to final rest was approximately 135 feet. The Honda Passport sustained significant structural damage throughout its body due to the rollover and contact with the

embankment. It was considered a total loss. Based on the physical evidence at the scene and corroborated by the driver, the approximate speed of the Honda when it left the road was about 40 mph. Both the vehicle and the roadway were in good condition and did not contribute to the crash. The driver was reportedly in good health and was very familiar with her vehicle and the roadway.

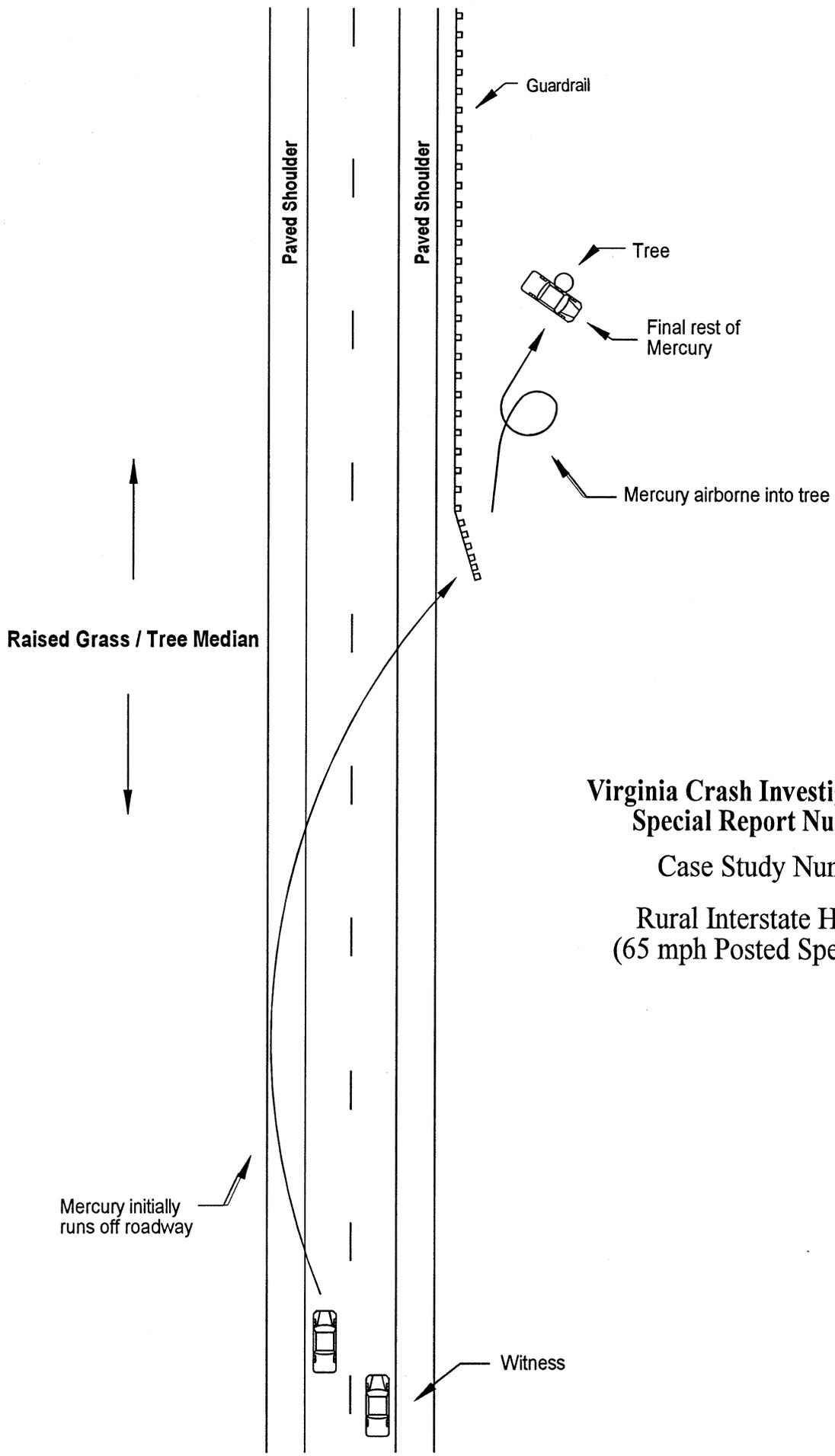
This crash, which could have resulted in far worse injuries and/or damages, was caused by a driver that was distracted from her driving task by searching and reaching for a pack of cigarettes. Whether her argument with her boyfriend prompted her to smoke at that particular time and location is speculative. Whatever the reason, this driver showed poor judgment by engaging in the distracting actions while maneuvering through a highway curve. By looking down at her purse and taking her attention and eyes off the road, she allowed the SUV to travel straight ahead as the road curved beneath her. Had she acted in the same unsafe manner on a straightaway, she would have been more likely to maintain control because the SUV would not have left the pavement at such a sharp angle. Had the road curved to the right and all other circumstances remained the same, it is likely the SUV would have continued traveling straight ahead, thus entering into the opposite lane and raising the risk of a head-on collision.

A review of the official state accident report completed by the investigating Trooper does not reveal the actual cause of this traffic crash. Due to the present design limitations of the current Virginia report (FR-300P), the driver's action block was noted as "driver inattention." In the narrative section, the Trooper noted that the vehicle "ran off the road, struck an embankment and overturned." The report shows the driver was charged with "Failure to maintain control" (reckless driving). While all of these entries are correct and indicate that driver error was the cause of the crash, the specific type of driver error is not apparent from reading the accident report. Had the Trooper not informed the Crash Team of the true nature of this crash, it would not have been known that the driver's inattention was due to her being distracted by reaching for a pack of cigarettes.

In order to present a more accurate picture of the causes of traffic crashes, the Team is of the opinion that a "driver distraction" category should be added to the present accident report. Under such a category there also should be several options that list a

sample of driver distractions such as “internal distraction” (interacting with other passengers, adjusting radio/vehicle controls, cell phone use, eating/drinking, smoking, etc.) and “external distractions” (outside person, object, or event). Having these items available so that a crash investigator can mark them on the report may give users of these reports a better understanding as to the actual causes of the main problem associated with traffic crashes, which is driver error. Also, the Crash Team strongly recommends that, until the report is changed, law enforcement officers enter within the “Accident Description” section on the FR-300 what specific driver inattention and/or distraction occurred. The more specifically these causes can be identified, the better highway safety communities can understand and hopefully prevent such crashes. It is important to not only inform and educate motorists on the dangers of driving inattentively but also to consider selective enforcement, legislative and/or other means to dissuade drivers from driving in an unsafe, distracted manner.

Another aspect concerning the true causes of traffic crashes that were pointed out to the Team is the dependency of the investigating officer on the drivers’ account of what occurred in the crash. Unless the driver advises the officer what he or she was doing at the beginning of the crash (unless witnessed by a passenger or another motorist), then the officer usually does not know what specific driver error caused the crash. It is speculated that in more times than not, drivers do not tell the officer that he/she was talking on a cell phone, looking away from the controls, talking with a passenger etc., for fear of incriminating himself. Therefore, it is believed that far more drivers inattention/distraction crashes occur than are reported.



**Virginia Crash Investigation Team
 Special Report Number 15
 Case Study Number 2
 Rural Interstate Highway
 (65 mph Posted Speed Limit)**



CASE STUDY NUMBER 2

Type of Crash:	Single vehicle, run-off-the road
Day, Time, Season:	Tuesday, 9:45 a.m., Spring
Vehicle Involved:	1999 Mercury Mystique four-door hardtop
Roadway:	Rural Interstate highway, 65 mph speed limit
Occupant:	42 year old female driver & 15 year old female passenger
Severity:	Two fatalities, extensive property damage
Causal Factors:	Driver distraction: cell phone use and driver over-correction

SUMMARY:

On a Tuesday morning at 9:25 a.m., a 42 year old female was driving her 1999 Mercury Mystique automobile south on a rural, divided interstate highway. The weather was misting and the roadway was damp along this straight and slight upgrade section of highway. Her 15 year old daughter, who was asleep in the right front passenger seat, accompanied her. Both occupants were returning to their home in North Carolina after spending the previous day and night at the home of the driver's friend in the Washington, D.C. area. Both occupants were unbelted. As the car was traveling in the left lane, it passed another vehicle traveling in the right lane. Once beyond this vehicle, the Mercury gradually drifted left and the left tires ran off the lane's edge and onto the paved shoulder. The car never struck the grassy median. As the tires began running over the shoulder's "rumble strips," the driver abruptly steered to her right in an attempt to regain the pavement. However, she over-corrected, causing the car to cross both lanes of the interstate and travel onto the paved shoulder. Two witnesses following the car said they did not observe any brake lights as the Mercury crossed in front of them. From the point where the car first departed its lane to where it entered the outside shoulder was estimated at over 300 feet.

As the Mercury crossed the right shoulder, its left front tire struck and rode up on the end section of a guardrail assembly that parallels the southbound lanes. Due to the ground beyond the guardrail being lower than the pavement, the car went airborne as it came off the guardrail, at the same time it began to rotate counter-clockwise. The car ran

off the road at an abrupt angle of 26 degrees. The car traveled airborne 66 feet and struck the downward sloped embankment with its left front undercarriage, causing it to gouge and plow through the ground a distance of 22 feet. Due to the relatively high speed of the car and the ground dropping off more abruptly, the car then went airborne a second time while beginning to rollover onto its left side. It continued 38 additional feet and struck a tree with its left front corner, which caused the car to rotate more sharply while still airborne. Ten feet later, with the Mercury still aloft and rolling, it collided roof-first with a large, five foot diameter tree. The contact on the tree was nearly eight feet above the ground. The impact was so great that the car's roof area was crushed inward nearly four feet and down onto the occupants. The collision caused the car to wrap around the tree in a typical u-shaped design. From the point that the car departed the right lane to final rest against the tree was 136 feet. The car's speedometer needle was stuck on 67 mph.

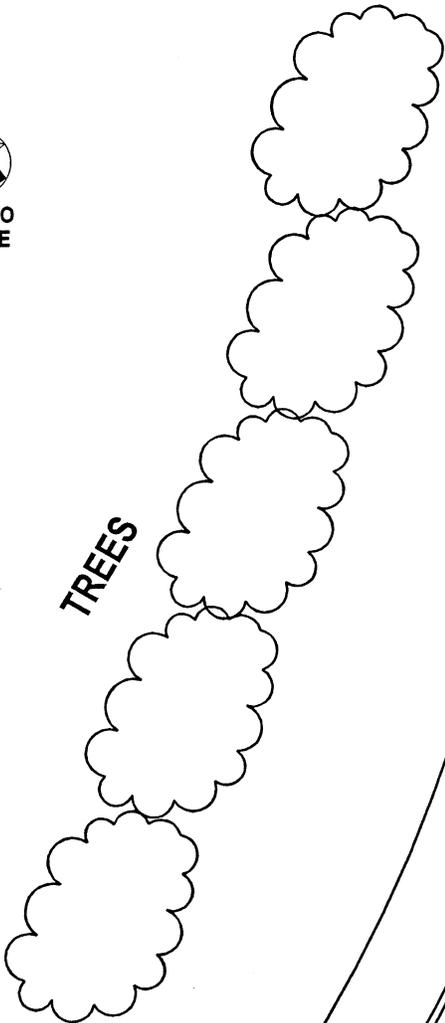
Both unrestrained occupants were crushed by the roof/tree intrusion and died instantly in the collision of massive head and torso trauma. They both remained inside the vehicle and could not be removed until the car was pried off the tree. Both rescue and police authorities were notified via passing motorists using cell phones and arrived about 10 minutes after the crash.

The motorist and his passenger who were being passed by the Mercury, just seconds before the Mercury driver lost control of her car, witnessed the immediate pre-collision actions of the car. These witnesses were riding in a GMC Safari van traveling between 72 and 75 mph. This driver had noticed the white Mercury overtaking him through his rearview mirrors. Its operation was unremarkable and no erratic movement was noticed. The Mercury passed on the left traveling about 3-4 mph faster than the van. As the car went by, he noticed movement inside the Mercury by the driver. The passenger appeared to be asleep. Closer observation of the driver revealed that she appeared to be talking on a cell phone. She was steering with her right hand and holding the phone up to her ear with her left hand. This could be seen through the rear window of the Mercury as it went by. When the Mercury was several car lengths in front of the witness, he noticed its left tires gradually drift out of the left lane and onto the paved shoulder. Once on the shoulder, which was equipped with rumble strips (whose purpose is to alert unsuspecting drivers that they have run-off-the road), the car was abruptly

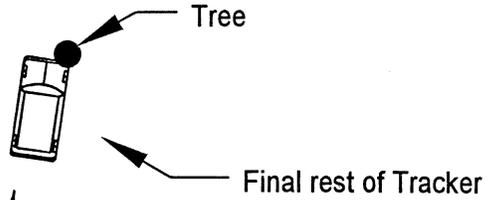
steered to the right. While this was occurring, the Safari driver braked and told his passenger, who was also seeing the events unfold before her eyes, to “watch out, they’re coming across.” Seconds later, the car sharply came across the roadway in front of the van and headed toward the opposite side guardrail. This witness then stopped on the right shoulder and was joined minutes later by two truck drivers who had also seen the crash events. With assistance from these truck drivers, the witness called authorities via their cell phones and went to the scene to offer assistance.

Due to the devastating destruction of the car, the investigating Trooper was not successful in locating the driver’s cell phone. Debris from the car was dislodged and thrown as far as 100 feet into the brush, leaves and undergrowth beyond the struck trees. However, the phone cradle or holder was found affixed to the center console dash. Once a positive identification of the driver and her daughter were made, relatives were contacted and responded to the scene that evening. None of them reported talking to her at the time of the crash. It was determined that the car’s occupants were most likely returning to the daughter’s school and the driver’s place of employment when the crash occurred.

The cause of this tragic crash was the driver not devoting her full attention to her driving task. Instead, she was talking on her cell phone to the extent that she allowed her car to drift out of her lane and onto the paved shoulder. Once on the shoulder, the noise and vibrations of the rumble strips likely startled her, and consequently, she over-steered to her right, causing the car to abruptly re-enter the road. Her high speed contributed to her loss of control as she over-steered and came back across the road. By focusing her attention and concentration on her phone conversation, she was not consciously aware of the highway environment surrounding her. When she finally realized that she was off the road, she over-executed the needed driver response to correct her movement. This crash emphasizes the importance of drivers paying attention to their driving tasks, the need to drive in accordance with speed limits and the hazards of over-correcting vehicular maneuvers to regain the road. In this case, had the driver gradually reduced her speed, gripped the steering wheel with both hands and gently steered back into the left lane from the shoulder, this crash may not have occurred.



Eastbound
lane
upgrade



**Virginia Crash Investigation Team
Special Report Number 15
Case Study Number 3**

Rural State Secondary Highway
(55 mph Statutory Speed Limit)

CASE NUMBER STUDY 3

Type of Crash:	Single vehicle, run off the road
Day, Time, Season:	Saturday, 8:55 a.m., Spring
Vehicle Involved:	2000 Chevrolet Tracker SUV
Roadway:	Rural, two lane undivided highway, Statutory 55 mph speed limit
Occupant:	51 year old female driver, belted
Severity:	Minor injury, light property damage
Causal Factors:	Driver distraction: cell phone use while driving

SUMMARY:

On a Saturday morning at 8:55 a.m., a lone 51 year old female was driving her two door 2000 Chevrolet Tracker sport utility vehicle (SUV) east on a rural, two-lane secondary road. The highway passes through a hilly area, which consists of mostly farmland with steep embankments and trees on each side of the road. The asphalt-paved road is constructed with many sharp curves with steep grades. The typically designed secondary roadway has a 55 mph statutory speed limit, is relatively narrow at 18 feet wide and had freshly painted double solid yellow centerlines. The roadway pavement was in excellent condition with no defects.

The driver was employed as a nurse at a local hospital and was also a mid-wife practitioner. On the morning of the crash, she was called at home by her employer and requested to drive approximately 25 miles to assist in the delivery of a child. While en route, only a few miles from her home, she was talking on her cell phone to medical personnel at the hospital about the needed medical procedures for her patient. This occurred while she was negotiating the roadway's many curves and grades, apparently without mishap. However, after completing the call, and while coming out of a curve to her left, she turned off the phone and went to place the phone in its holder located in the lower, center console next to her right hip. In doing so, she looked away from her driving controls to find the holder. As she was placing the cell phone there, she allowed her vehicle to gradually leave the road and encroach on the narrow, grassy right shoulder. Nearly 100 feet beyond the curve, where the highway is constructed on a straight and upgrade section, the Tracker entered the top portion of a steep embankment, which

sloped away from the road. Before the driver could react, the right front fender of her vehicle made initial contact with a small tree. The vehicle continued traveling straight ahead and the right rear side then struck the same tree in a sideswiping, glancing movement. Because the slope of the embankment was increasing, the driver's steering action to the left was of no benefit and the right side tires and rims began to collect grass and dirt between the beads.

After traveling only about 50 feet along the unpaved shoulder/embankment, the right front of the Tracker then struck a larger tree, which abruptly stopped the SUV's forward movement. The SUV at this point had already slowed appreciably from the driver's estimated pre-impact speed of 35mph. Impact was such that the right front bumper, hood, grill, and fender areas were crushed rearward nearly one foot. Due to the driver being properly belted, she did not strike the interior of the car. Although the vehicle was equipped with a driver side airbag mounted in the steering wheel hub, it did not deploy. There was no deployment because the speed and energy at impact were below the designed deceleration rates of the airbag system. The driver incurred only minor bruising from the safety belt and was not injured in the crash. No other vehicles were involved. She was able to phone authorities from her vehicle. After the arriving Trooper completed his investigation, the driver was charged with "reckless driving."

This minor crash occurred as a result of the driver taking her attention off her normal driving duties during the completion of her cell phone call and attempting to place the phone in its holder. In the brief time that she looked down, she was off the road and into the trees. This crash emphasizes that drivers must devote their full attention to their driving task in order to be safe. Also, in this particular instance, had the driver been using a "hands-free" cell phone, one that she did not have to hold physically in her hand and/or hang up, she might not have traveled off the road and this crash may not have happened.

Final Rest of Ford Van



**Virginia Crash Investigation Team
Special Report Number 15
Case Study Number 4**

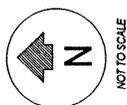
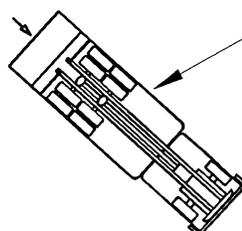
Rural State Primary Highway
(55 MPH Posted Speed Limit)

Dump Truck Runs off road
and rolls over

Ford Van Gradually Crosses
Center Lines



Final Rest of
Dump Truck



CASE STUDY NUMBER 4

Type of Crash:	Multiple vehicle, offset, head-on collision
Day, Time, Season:	Monday, 12:15 p.m., Spring
Vehicles Involved:	1999 Ford Van 1996 Ford Dump Truck
Roadway:	Rural, two-lane undivided primary highway 55 mph posted speed limit
Occupants:	25 year old male, belted driver in Van 63 year old male, belted driver in dump truck
Severity:	Two injuries, extensive property damage
Causal Factors:	Driver distraction: reading road map

SUMMARY:

On a Monday afternoon at 12:15 p.m., a lone 25 year old male was driving his company's 1994 Ford full-size service van east on a rural, two-lane, undivided state primary highway. The van was en route to a nearby subdivision so its driver could work on a plumbing problem in a new house. The asphalt-paved road is marked by solid yellow centerlines and white edge lines, and the roadway is in excellent condition. Approaching the crash site in the direction of the van, the roadway is constructed on a slight downgrade and a moderately sharp curve to the right. About 100 feet into the curve, the van traveled straight ahead and partially crossed the centerlines into the westbound lane. With no braking or other evasive action, the van was now on a direct collision path with a large westbound dump truck. The 1996 Ford dump truck, consisting of three axles and carrying a full load of gravel, was driven by a lone 63 year old male. The truck was en route to a construction site. Both drivers were wearing lap and shoulder belts.

When the van's left front was about two feet over the centerlines and into the westbound lane, it struck the dump truck's left front corner in an offset, head-on/sideswiping motion. Overlapping damage on both vehicles was measured at about two feet. Upon impact, the larger, heavier truck tore through the van's left front corner, partially ripping off the left front tire and wheel assembly. As the momentum of both vehicles kept them traveling straight ahead during the initial collision, the van's left side

was completely ripped open by the passing dump truck. This impact caused the van to begin to rotate counterclockwise while partially in the eastbound lane until it completely crossed the centerlines and came to rest on the westbound shoulder of the road. The van was facing northwest after rotating 150 degrees and came to rest about 100 feet from impact. The van's belted driver remained inside the damaged vehicle and was not ejected during the collision.

The dump truck's left front tire and wheel areas were likewise severed immediately after the collision. This caused the dump truck's left front to fall onto the pavement while rotating counterclockwise. The out-of-control dump truck then crossed the centerlines, traversed the eastbound lane, and traveled beyond the gravel shoulder. It then ran off an embankment through a fence and into a grassy field, where it rolled over onto its top. The dump truck traveled 355 feet from the point of impact. The belted driver remained inside and was not ejected.

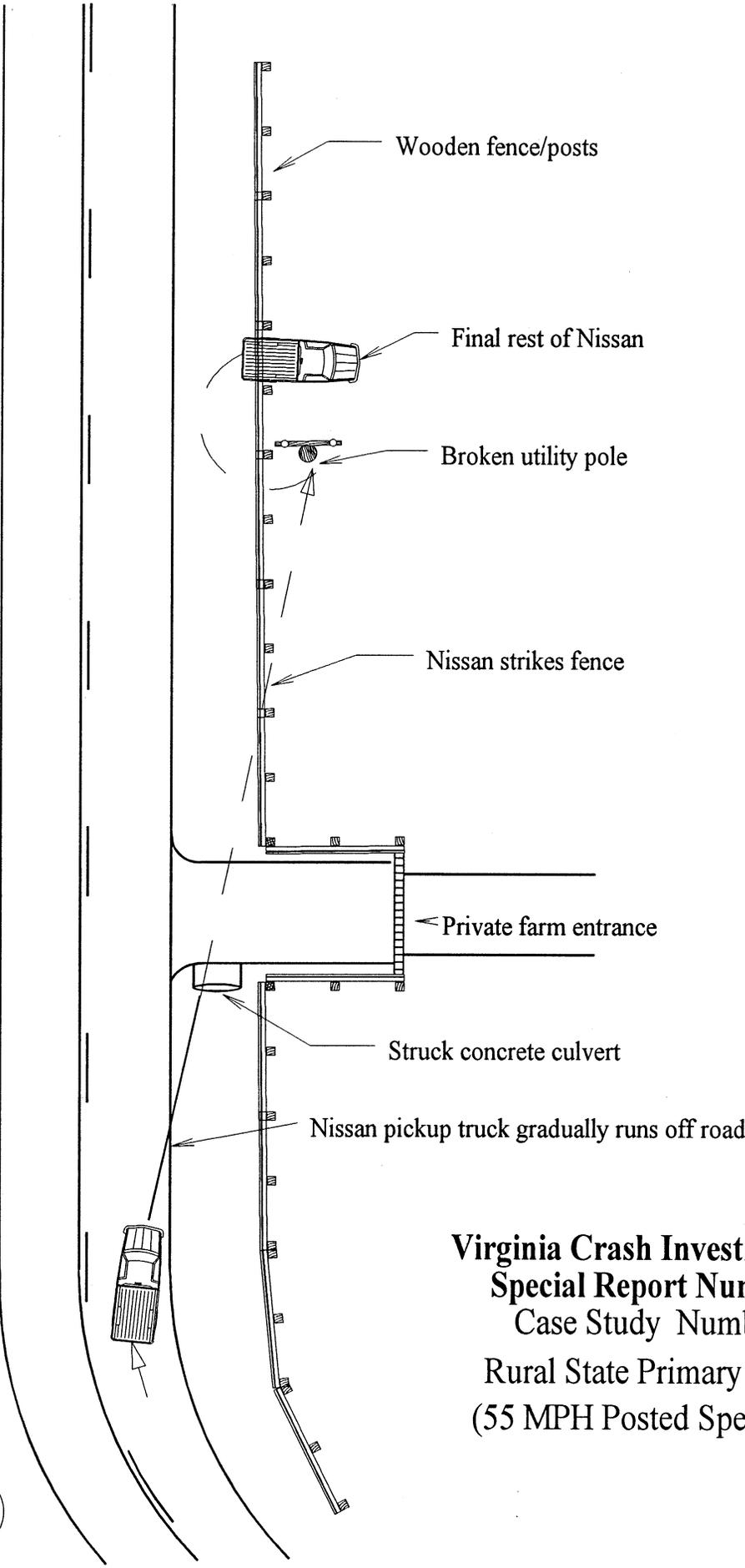
The investigating trooper and fire/rescue personnel were called by passing motorists and each responded to the scene within 15 minutes. The van driver was the most severely injured and was rushed to the local hospital, where he was admitted and treated for nearly one week after the crash. The dump truck driver was also taken to the hospital where he was treated and released. Both had received numerous abrasions, contusions and lacerations incurred in the crash. The crash site was photographed and documented for physical evidence and the vehicles moved. The scene was cleared within one hour after the crash.

The dump truck driver advised the Trooper that he was properly in his westbound lane when the eastbound van suddenly appeared crossing the centerlines. Because it happened so quickly, he had no time to attempt any evasive action. The van driver told the Trooper that, as he was approaching the curve, "he took his eyes off the road for a second or two" and then impact occurred. When questioned further by the Trooper as to why his eyes were off the road and/or what he was looking at, the van driver did not answer. The Trooper inspected the van's interior at the crash site and found a road Atlas lying in the front floorboard, opened to a map of the area near the crash site. Fresh blood from the van driver was located on the map pages. The Trooper made contact with the van driver's father, who owns the company and the van. He discussed the possibility that

the van driver was looking at the map at the time of the crash. The father advised that his son was heading to a new job site that he had never been to before and that he certainly was not familiar with the area. The father concluded that his son could have very well been looking at the map while driving. When questioned a second time, the van driver denied looking at the map. He was later charged with reckless driving.

This crash occurred because the van driver clearly failed to maintain control of his vehicle and allowed it to enter the opposite lane where a serious, near fatal crash ensued. The collision occurred within the beginning of a right-hand curve. Sight distance for the van driver approaching the curve was excellent. The Crash Investigation Team feels there is sufficient circumstantial evidence collected by the Trooper to strongly indicate that the van driver was distracted by looking at his map while driving. Instead of pulling off the road for a better look, he chose to peer at the map at perhaps the worse possible location: within a curve where the driver input needed to keep the van in the proper lane was critical. His actions at that point in time and location caused the van to continue traveling straight ahead while the roadway turned to the right underneath him. While this was a serious crash, it had the potential to be far more severe, possibly resulting in multiple fatalities. This crash clearly illustrates the need for drivers to be focused on their driving task and not be distracted by reading a road map.

When examining the police accident report, no mention of what the van driver was actually doing inside the vehicle was given. Under the “Driver’s Action” category, the Trooper noted that the van driver was on the “wrong side of road-not overtaking.” While this notation is certainly appropriate, had this crash not been brought to the attention of the Crash Team, it would have never been judged a driver distraction case.



Wooden fence/posts

Final rest of Nissan

Broken utility pole

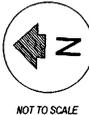
Nissan strikes fence

Private farm entrance

Struck concrete culvert

Nissan pickup truck gradually runs off road

**Virginia Crash Investigation Team
 Special Report Number 15
 Case Study Number 5
 Rural State Primary Highway
 (55 MPH Posted Speed Limit)**



CASE STUDY NUMBER 5

Type of Crash:	Single vehicle, run-off-the road
Day, Time, Season:	Thursday, 3:15 p.m., Spring
Vehicle Involved:	1993 Nissan pickup truck
Roadway:	Rural two-lane undivided, primary highway, posted 55 mph speed limit
Occupant:	19 year old male driver, belted
Severity:	One fatality, moderate property damage
Causal Factors:	Driver distraction: cell phone use while driving

SUMMARY:

On a Thursday afternoon at 3:15 p.m., a lone 19 year old male was driving his 1993 Nissan pickup truck east on a rural, two-lane undivided primary highway. The highway passes through rolling terrain, which consists mostly of open farmland on both sides of the highway. The asphalt roadway is constructed on moderately sharp curves with many long straight segments. The pavement is in excellent condition and is marked by yellow centerlines and white edge lines. The roadway is bordered by gently sloped grass shoulders and wooden fences. Timber utility poles are parallel to both sides of the highway.

The driver had just left a successful job interview located about 5 miles away, and was heading home, about 7 miles away. After negotiating a series of gentle grades and curves, the Nissan began traveling along a straight section of roadway constructed on a slight downgrade. Approximately 300 feet past a curve to the right, the Nissan gradually ran off the pavement and began to travel across the gently sloped grassy shoulder bordering the eastbound lane. After traveling nearly 100 feet with no evidence of braking, the Nissan's right front tire struck a culvert drainage pipe that was located about four feet from the pavement's edge, hidden by tall grass. After running over the pipe, the Nissan's angle from the road increased, causing the pickup to travel further away from the pavement, where it crossed over a paved farm driveway and began to rotate counter/clockwise. Without any signs of evasive action, the truck then struck and went through a 6-foot tall wooden fence. The truck continued to rotate and then struck a utility pole with its right side and door, severing the pole. This impact caused the truck to

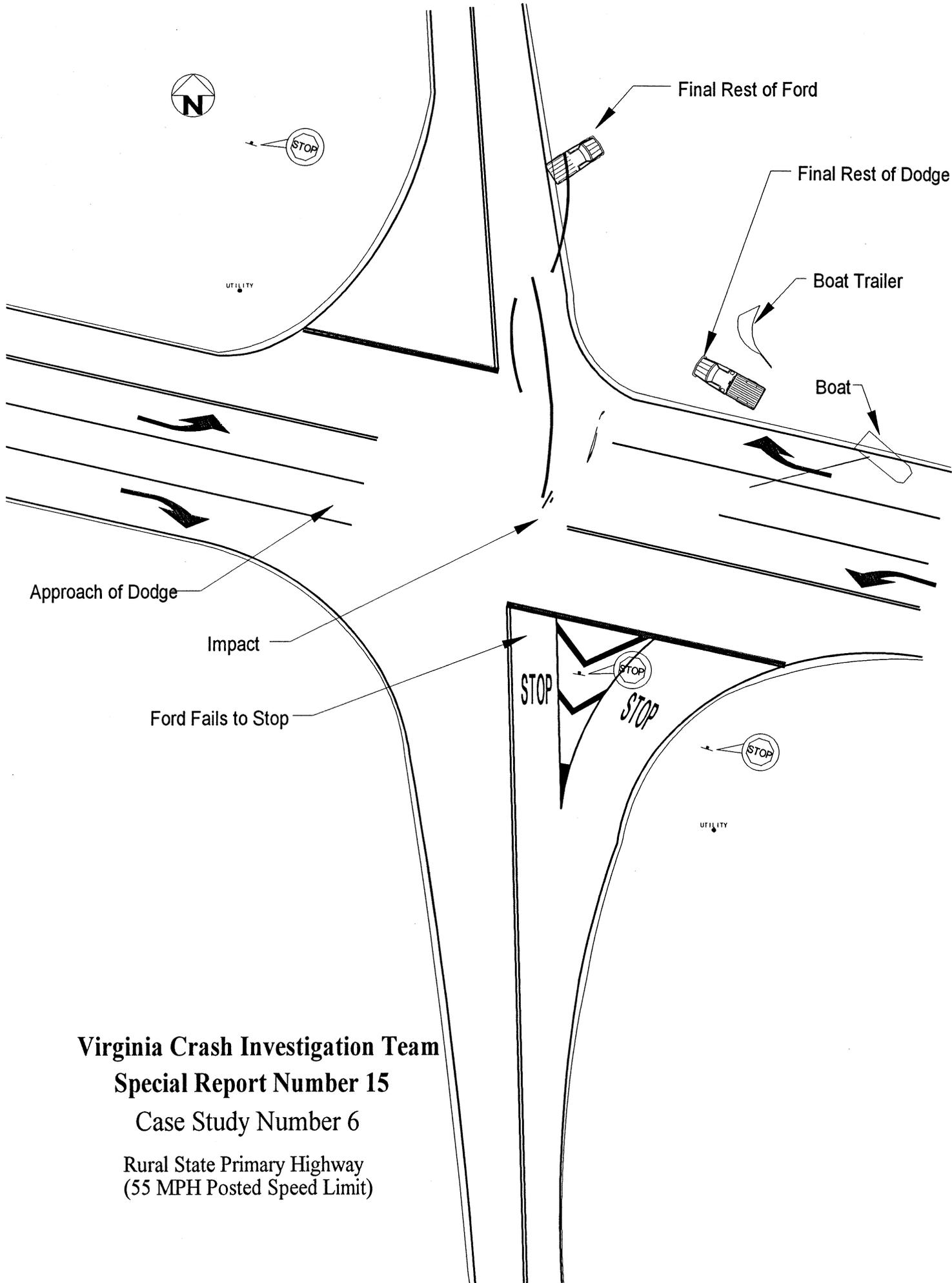
rotate clockwise, coming to rest 20 feet beyond the pole and facing south. From the point where the truck first ran off the road to its final rest was about 250 feet.

A westbound school bus driver approaching from the opposite direction saw the Nissan run off the road and collide with the fence and pole. No other vehicles were around the pickup when it left the road. The weather was clear and dry and did not contribute to the crash. The driver and vehicle were both reportedly in good condition prior to the crash. The bus driver called in the crash to authorities and fire/rescue and state police responded within minutes. Because the driver was belted, he was not ejected and was found in the driver's seat slumped over the steering wheel. He received fatal head injuries when pieces of the fence and posts came through the windshield and impaled him. His death was instantaneous.

A cell phone with its antenna extended was found in the driver's left hand as he slumped forward in his seat. His right hand and arm rested below the steering wheel, crossing over his left arm. The position of the cell phone immediately following the crash leaves little doubt that he was either talking on the phone or in the process of starting or completing a call at the time he ran off the road.

This crash illustrates the dangers of driving while being distracted. While tragically resulting in the death of the young driver, it had the potential of even more serious results if the loss of control had led to a head-on collision with the school bus or other vehicle.

The cause of this crash was listed on the police accident report as "driver inattention- driver lost control of his vehicle and ran off the road." While these entries on the report are correct, again they do not give a full account of the crash. Had this crash not been brought to the attention of the Crash Team, it would not have been recorded as a driver distraction case.



Virginia Crash Investigation Team
Special Report Number 15
 Case Study Number 6
 Rural State Primary Highway
 (55 MPH Posted Speed Limit)

CASE STUDY NUMBER 6

Type of Crash:	Multiple vehicle; angle collision
Day, Time, Season:	Friday, 8:45 p.m., Summer
Vehicles Involved:	1988 Ford Bronco SUV (towing a boat) 1998 Dodge pickup truck
Roadway:	Crossroad intersection between two rural, undivided primary highways, controlled by stop signs and overhead flashing beacons. 55 mph posted speed limit.
Occupants:	47 year old male driver, and 46 year old male passenger both belted, Ford occupants; 41 year old male driver, belted and 45 year old male passenger unbelted, Dodge occupants.
Severity:	One fatality, three injuries and extensive property damage
Causal Factors:	Driver distraction: looked at passenger and pet dog that jumped into front seat area.

SUMMARY:

On a Friday evening at about 8:45 p.m., a belted 47 year old male was driving his full size 1988 Ford Bronco north on a rural two-lane undivided state primary highway. The driver was accompanied in the right front by his belted 46 year old male friend. The friend's dog was in the back seat floor area. The Ford occupants were not familiar with the roadway. They were towing a boat and trailer with the intent to go fishing for the weekend. The light conditions were dusk and the weather was clear and dry. The level, asphalt-paved road, which is in good condition, is marked by yellow centerlines and solid white edge lines. Unimproved gravel/grass shoulders and thick wooded areas border the highway on both sides. The northbound lane approaches a busy, four leg, crossroad intersection requiring northbound traffic to stop. Located at the intersection are two oversized stop signs, white painted "STOP" messages and stop lines on the pavement, and two overhead red flashing traffic beacons. A series of ten raised, white, painted rumble strips and two oversized graphic "stop ahead" warning signs are placed prior to the intersection. The adjacent signal faces have flashing yellow lights for the east-west

directions of traffic. It was the intent of the Ford driver to stop at the intersection and then turn right to go east on the intersecting roadway.

As the Ford neared the intersection, its driver was aware of the rumble strips and stop ahead conditions, and he began to slow down. Just before they reached the stop sign, the passenger's puppy, originally located in the back seat area, suddenly jumped into the front passenger floorboard. The passenger attempted to secure the animal by reaching down to him. As a result of these unexpected actions, the Ford driver looked down at the dog, consequently failing to stop at the intersection. At a driver estimated speed of 30 mph, the Ford entered the intersection, directly in front of an approaching eastbound vehicle.

A 1998 full-size Dodge Ram pickup truck driven by its 41 year old belted owner who was accompanied by an unbelted 45 year old male passenger entered the intersection. Not realizing that the Ford had violated the stop sign and was entering the lane in front of him, the Dodge driver had no time to take evasive action. Therefore, at a speed of about 55 mph, he ran into the left rear of the Ford with the full front of the Dodge. The angle collision caused the Ford to rotate in a counter clockwise direction and both vehicles to travel diagonally toward the northeast and across the westbound lanes. The collision was so severe that the boat and its fishing related contents made contact with the right side of the Dodge in the vicinity of the passenger. Damage on the two vehicles and the boat (and trailer) was extensive. Numerous items from the boat came into the Dodge passenger's area, striking him. During the rotation the unbelted Dodge passenger was ejected and came to rest on the grassy shoulder beside the vehicle. He died instantly as a result of severe trauma to his head and chest. The driver, because he was belted, remained inside the vehicle and sustained minor multiple body injuries. Both belted occupants inside the Ford remained with the vehicle and suffered minor injuries. The dog survived the collision.

At final rest, the Ford faced northeast just off the northbound lane, approximately 125 feet from the impact point. It had rotated nearly 300 degrees, while spinning across the pavement and the right gravel/sod shoulder. The boat trailer had separated from the Ford and was found southeast of the Bronco, resting in a grassy field adjacent to the westbound lane, about 40 feet from the pavement. The boat had detached from the trailer

and was resting partially in the right turn lane for westbound traffic. The Dodge came to rest off the pavement in the northeast corner of the intersection beside the boat trailer, facing west. It had rotated nearly 160 degrees. Its final rest was about 95 feet from the point of impact.

The investigating Trooper arrived at the site about 20 minutes after being notified by his dispatcher. The crash had been phoned in by passing motorists who had driven up within minutes after it occurred. The injured were treated and taken to a local hospital. The deceased victim was removed to the medical examiner's office. The State Police Crash Reconstruction Team assisted the Trooper in his investigation. The Ford driver was later charged with Reckless Driving, and further charges are pending. The narrative on the Police Accident Report (FR-300P) noted that the Ford driver "failed to stop at a posted stop sign and flashing red light." The driver's action category was coded as "driver disregarded stop sign." The actual cause of this crash is not listed as driver distraction. While these were reported correctly, they did not identify the true cause of the crash.

This crash emphasizes the need for drivers to devote their full attention to the driving task and to be constantly vigilant of the traffic conditions in and around them. Also imperative is the need to restrain pets while in transit and to be on guard to not let their actions influence the behavior of the drivers. This crash also illustrates the importance of proper safety belt use.

APPENDIX

Table 3**Driver's Actions in Reported Crashes**

<u>Year</u>	<u>Drivers in ALL Crashes</u>	<u>Drivers in FATAL Crashes</u>
	<u>No. of drivers~ % Inattention</u>	<u>No. of drivers~ % Inattention</u>
2000	32,131~ 13.0%	200~ 15.7%
1999	31,841~ 12.9%	193~ 16.8%
1998	30,867~ 12.8%	188~ 15.2%
1997	29,576~12.8%	213~ 16.0%
1996	29,558~ 12.7%	184~ 15.4%
1995	29,284~ 12.9%	193~ 16.1%
1994	27,903~ 12.4%	190~ 15.9%
1993	26,762~ 12.5%	163~ 13.9%
1992	26,536~ 12.1%	134~ 11.8%
1991	26,018~ 11.6%	161~ 13.3%
1990	27,267~ 11.6%	187~ 13.2%
1989	27,778~ 11.0%	162~ 12.3%
1988	28,274~ 11.1%	165~ 11.7%
1987	27,759~ 10.9%	169~ 12.8%
1986	26,716~ 11.0%	160~ 11.0%
1985	24,522~ 10.9%	146~ 11.0%
1984	22,328~ 10.5%	137~ 10.2%
1983	20,575~ 10.5%	117~ 10.1%
1982	18,823~ 9.9%	106~ 9.4%
1981	20,033~ 10.1%	121~ 9.5%
1980	18,838~ 9.7%	118~ 9.1%
1979	18,269~ 8.4%	111~ 8.5%
1978**	16,167~ 7.0%	85~ 6.0%

Since 1978 the number one causal factor associated with ALL reported crashes has been driver inattention and/or excessive speed.

**First Year "Driver Inattention" was collected

Source: Dept. of Motor Vehicles Virginia Traffic Crash Facts books, 1978-2000.

Table 4

A review of States Crash Reports associated with Driver Inattention

1. **Alabama:** No specific driver inattention/distraction entry codes available on Crash report form.
2. **Alaska:** “Apparent Contributing Factors (human)”-Driver inattention(indicate); Passenger distraction
3. **Arizona:** “Driver Behavior/Violations”-Inattention
4. **Arkansas:** No entry available on report
5. **California:** “Other Associated Factors”-Inattention (indicate)
6. **Colorado:** “Most Apparent Human Contributing Factors”-Distracted by Passenger; Driver preoccupied
7. **Connecticut:** “Driver Contributing Factors”-Inattention (changed to No Entry in 1995)
8. **Delaware:** No entry available on report
9. **District of Columbia:** “Contributing Circumstances/Primary and Secondary Factors”-Driver Inattention
10. **Florida:** No entry available on report
11. **Georgia:** “Driver Condition, Contributing Factors”-Distracted
12. **Hawaii:** “Driver/Human Factors”-Inattention; Distracted by occupant
13. **Idaho:** “Contributing Circumstances Possible”-Distraction in/on vehicle (list); Inattention
14. **Illinois:** “Apparent Physical Condition”-Distraction in or outside (of vehicle); Preoccupied (No Entry changed in 1996.)
15. **Indiana:** “Contributing Circumstances”-Driver Inattention; Passenger Distraction
16. **Iowa:** “Driver Related Contributing Circumstances”-Inattentive or Distracted
17. **Kansas:** “Driver Contributing Circumstances”-Failed to give Full Time and Attention; Distraction in or on vehicle
18. **Kentucky:** “Apparent Contributing Factors (Human)”-Driver Inattention; Distraction
19. **Louisiana:** “Condition of Driver”-Inattentive or Distracted
20. **Maine:** “Apparent Contributing Factors” (Primary-Secondary)-Driver Inattention/Distraction
21. **Maryland:** “Contributing Circumstances”-Failed to give Full Time and Attention
22. **Massachusetts:** No entry available on report
23. **Michigan:** No entry available on report

24. **Minnesota:** “Apparent Contributing Factors” (Factor 1 and Factor 2)-Driver Inattention/Distracted, Driver on **Car phone**
25. **Mississippi:** “Contributing Circumstances”-Inattention
26. **Missouri:** “Probable Contributing Circumstances”-Inattention
27. **Montana:** “Accident Analysis”-Inattentive Driving; Distraction within vehicle; Distraction outside vehicle (Changed to Inattentive driving in 1996)
28. **Nebraska:** No entry available on report
29. **Nevada:** “Contributing Factors”-Driver Inattention
30. **New Hampshire:** “Apparent Contributing Factors”-Driver Inattention/Distracted
31. **New Jersey:** “Apparent Contributing Circumstances”-Driver Inattention
32. **New Mexico:** “Apparent Contributing Factors”-Driver Inattention
33. **New York:** “Apparent Contributing Factors (Human)”-Driver Inattention (indicate); Passenger distraction
34. **North Carolina:** No entry available on report
35. **North Dakota:** “Contributing Factors”-Attention Distracted
36. **Ohio:** “Contributing Factor/Driver Error”-Driver Inattention
37. **Oklahoma:** Unsafe, Unlawful or other (driver) action- “other” (describe)
38. **Oregon:** “Driver Factors”-**Cell Phone** Use; “Passenger Factors”-Interfered with Driver
39. **Pennsylvania:** No entry available on report
40. **Rhode Island:** No entry available on report
41. **South Carolina:** “Probable Cause/Driver”-Inattention
42. **South Dakota:** “Contributing Circumstances/Driver”-Distracted by Object, Person inside car
43. **Tennessee:** No entry available on report
44. **Texas:** “Factors/Conditions Contributing to Crash” (Primary-Secondary)-Distraction in vehicle; Driver Inattention
45. **Utah:** No entry available on report
46. **Vermont:** No entry available on report
47. **Virginia:** “Driver’s Action”-Driver Inattention
48. **Washington:** “Contributing Circumstances”-Driver Inattention
49. **West Virginia:** “Contributing Circumstances”-Distraction inside vehicle
50. **Wisconsin:** “Possible Contributing Circumstances”-Driver Factor- Inattentive Driving
51. **Wyoming:** “Most Apparent Human Contributing Factor”-Distraction (indicate); Driver Inattention

Source: US Dept. of Transportation, NHTSA State Crash Report Forms Catalog (1992 and 1999 updates).

Introduction to Table 5

The Crash Investigation Team reviewed all fatal police crash reports contained in its files between 1998 and 2001 searching for driver distraction data. Of these reports, about 16 percent were coded as driver inattention and only a few of these reports actually listed the specific driver distraction. Therefore, in an attempt to secure more accurate crash data, the Team requested from all Virginia law enforcement agencies to be notified of any serious crash occurring between April 1 and October 31, 2001 that involved a known driver distraction. Specifically named in this notification request were a list of driver distractions such as cell phone use (or other similar electronic communication or navigation devices), radio (tape player, CD player or similar) use, any internal controls (air conditioner, cruise control, light switches, safety belts, or similar vehicle components), and any other internal distraction such as interactions with passengers, driver reading, eating/drinking or others. Also requested were any reported external distractions such as driver looking at a previous crash situation, highway work zones, area scenery, and others. The Team was contacted on at least 30 occasions during this seven month time period and the results of these notifications are listed in the previous six case studies and in Table 5.

Table 5

Specific Crashes Reported to Crash Investigation Team (April 1-October 31, 2001)

<u>Table #</u>	<u>Crash Location</u>	<u>Crash Circumstances</u>	<u>At-Fault Driver</u>	<u>“Driver’s Action” as Noted on Report</u>
1.	Eastern Virginia, urban city street intersection (straight roadway)	Rear End-collision between a van and auto. Driver of auto failed to see van stop at traffic signal because cell phone was ringing and she took eyes/attention away from roadway to answer call. 6:30AM-spring-clear and dry. (One injury)	24yr. old female, charged with following too closely	Driver Inattention
2.	Northern Virginia, urban county street (straight roadway)	Pedestrian fatality. The car driver under the influence of alcohol, was adjusting CD player and allowed car to drift to edge of road striking pedestrian. 9:45AM-spring-clear and dry. (One Fatality)	17yr. old female, charged with DUI	Driver Inattention
3.	Eastern Virginia, urban state primary route/drawbridge (straight roadway)	Rear end-collision between three automobiles. At-fault driver failed to see two stopped vehicles awaiting a raised drawbridge to clear because he was looking away from his driving tasks to see/ reach for an object on the passenger seat. 2:55PM-spring-raining and pavement wet. (Two injuries)	61yr. old male, charged with reckless driving	Driver Inattention
4.	Western Virginia, urban city street (straight roadway)	Single vehicle run-off-the road crash. The car driver, under the influence of alcohol, got into an argument with passenger who was repeatedly adjusting radio. 2:08AM-spring-clear and dry. (Four injuries)	21yr. old male, charged with DUI	Driver Inattention
5.	Central Virginia primary route within a city (straight roadway)	Single vehicle run-off-the road crash. The driver was attempting to pick up loose trash in the front seat to put in a trash bag, when she took her eyes off of the road. 11:38 AM-summer-clear and dry. (One injury)	23yr. old female, charged with reckless driving	Driver Inattention

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6.	Central Virginia rural, secondary route (highway curve)	Head-on collision between a pick up truck and Jeep. The driver of pickup truck was talking on a cell phone as he entered a left hand curve. The truck crossed the double solid centerlines and collided with opposite traveling vehicle. 7:31 PM-fall-clear and dry. (Three injuries)	45yr. old male, charged with reckless driving	Wrong side of road-not overtaking
7.	Eastern Virginia rural primary route (highway curve)	Head-on collision between a small car and van. The car driver, accompanied by five passengers, was returning home from a soccer match when he lost control of his vehicle. He was found behind the steering wheel, with a “beer between his legs and a CD in his hand.” 5:05 PM-summer-clear and dry. (5 fatalities, 3 injuries)	27yr. old male, no charges placed	Exceeded speed limit
8.	Eastern Virginia urban city street intersection (straight roadway)	Angle collision at a signalized intersection between a car and van. Van driver was talking on a cell phone and failed to respond to red traffic light. Van then struck a left turning car in the side. 10:11 PM-spring-clear and dry. (Two injuries)	24yr. old male, charged with reckless driving	Driver inattention- “Talking on cell phone”
9.	Northern Virginia urban city street (straight roadway)	Rear end collision between four autos that were slowing/stopped for traffic conditions ahead. Driver was talking with vehicle occupant and failed to see traffic in front of him. 3:42PM, summer, clear and dry. (Two injuries)	21yr. old male, charged with reckless driving	Driver inattention- “Driver looked away from roadway”
10.	Central Virginia rural secondary route (highway curve)	Head-on collision between a pickup truck and auto. Driver of pickup looked down at his seat and picked up his two-way radio to make a call and allowed his vehicle to cross centerlines and strike opposite traveling vehicle. 11:44AM, summer, cloudy and dry. (One injury)	30yr. old male, charged with failure to stay to the right side of highway	Wrong side of road, not overtaking-“Driver looked down to pick up radio.”

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11.	Central Virginia rural secondary route (straight roadway)	Single vehicle crash between a SUV and trees off roadway. Driver reached down to answer cell phone and allowed car to run off road and collide with two trees 8:30PM, summer, clear and dry. (One injury)	42yr. old male, charged with reckless driving	Driver inattention- “Driver took his eyes off the road to answer his cell phone.”
12.	Western Virginia urban city street (highway curve)	Single vehicle crash-pickup truck ran off road due to driver adjusting radio controls and struck a pole. 6:23PM, summer, clear and dry. (One injury)	27yr. old male, charged with reckless driving	Exceeded speed limit- “Driver was adjusting radio.”
13.	Central Virginia rural secondary road (straight roadway)	Single vehicle crash between an auto and mailbox/embankment. Driver began to activate his hand held cell phone causing him to run off the road right. He then over-corrected, crossed road and ran off road on left. 4:05PM, summer, clear and dry. (One injury)	25yr. old male, charged with reckless driving	Driver inattention- “Driver decided to use cell phone and then lost control of Vehicle.”
14.	Northern Virginia town street (straight roadway)	Rear end collision between three vehicles. Driver of pickup truck failed to see stopped vehicles in front of him when he was searching for a CD and struck another pickup truck which then rear ended a stopped car. 5:05PM, fall, clear and dry. (One injury)	23yr. old male, charged with reckless driving	Driver inattention- “Driver stated he was looking down for a CD and ran into the rear of vehicle.”
15.	Northern Virginia town street intersection (straight roadway)	Angle collision between a SUV and auto. Driver of SUV failed to stop at a stop sign due to him reaching for a pack of cigarettes and he struck car in the side. 10:10AM, fall, clear and dry. (One injury)	46yr. old male, charged with reckless driving	Disregarded stop sign- “Driver stated he was getting a cigarette and ran the stop sign.”

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16.	Northern Virginia town street intersection (straight roadway)	Rear end collision between two small trucks. Driver failed to see a stopped truck waiting to turn at a intersection due to him reaching for a pen and ran into the rear of vehicle. 5:00PM, fall, clear and dry. (Two injuries)	19yr. old male, charged with reckless driving	Driver inattention- “Driver stated he was reaching for a pen and failed to see vehicle stopped in front of him.”
17.	Northern Virginia town street (highway curve)	Single vehicle crash, run off the road right. Driver of van spilled a soda and attempted to clean it up while still driving. While doing so, she ran off the road and struck a fixed object. 3:27PM, fall, clear and dry. (One injury)	35yr. old female, not charged (due to no injuries and little property damage)	Driver inattention- “Driver stated she spilled a soda and leaned down to clean it up and went off the right side of road striking mailbox.”
18.	Western Virginia rural secondary road (highway curve)	Offset head-on collision. Driver of auto was looking through her purse attempting to find a tube of lipstick. While doing so she allowed her car to enter opposite lane and strike a school bus. 7:50AM, summer, clear and dry. (Three injuries)	16yr. old female, charges pending due to the extent of her serious injury	Wrong side of road not overtaking
19.	Central Virginia rural primary route (straight roadway)	Head-on collision. Driver of auto was looking for her cell phone and allowed her car to cross the centerlines and collide with another car. 8:40PM, fall, clear and dry. (Two injuries)	40yr. old female, charged with reckless driving	Wrong side of road not overtaking. “Driver looking for her cell phone.”
20.	Western Virginia town street (straight roadway)	Single vehicle, run off the road crash. Pickup truck driver was looking for a flash light and allowed his vehicle to leave pavement and collide with a tree. 1:20AM, summer, clear and dry. (Two injuries)	20yr. old male driver was charged with failure to maintain control of vehicle.	Driver inattention- “Driver stated he took his eyes off the road as he was reaching for a flash light.”

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21.	Western Virginia town street (straight roadway)	Rear end collision between two vehicles. Vehicle one driver was looking at a previous wreck , slowed and was struck by following vehicle. 5:35PM, summer, rainy and wet. (One injury)	42yr. old male driver was not charged.	Driver inattention- “Driver was looking at car stereo and did not see vehicle stopped in front of him.”
22.	Western Virginia town street (straight roadway)	Rear end collision between two vehicles. Vehicle one stops to allow left turning vehicle to cross and is struck by following vehicle whose driver was looking at radio . 1:50PM, fall, clear and dry. (Property damage)	16yr. old male driver was not charged.	Driver inattention- “Driver was looking at car stereo and did not see vehicle stopped in front of him.”
23.	Western Virginia town street (straight roadway)	Rear end collision between two vehicles. Vehicle one swerved to miss a parked car when his passenger opened the car door, causing the driver to strike a stopped vehicle. 8:00PM, fall, clear and dry. (Property damage)	21yr. old male driver, alcohol impaired- was charged with reckless driving and hit and run.	Exceeded speed limit- “Driver traveling in excess of speed limit when front seat passenger suddenly opened car door.”
24.	Western Virginia town street (highway curve)	Rear end collision between two vehicles. A stopped vehicle was waiting for another vehicle to turn and was struck from behind by driver who was adjusting sun visor . 7:50PM, fall, clear and dry. (Property damage)	22yr. old female was charged with failure to maintain control of vehicle.	Driver Inattention- “Driver stated she had taken her eyes off the roadway while adjusting sun visor.”
* 25.	Central Virginia rural secondary road (highway curve)	Single vehicle, run off the road right crash. Driver of SUV reached for a pack of cigarettes and allowed her vehicle to run off the road and overturn into an embankment. 11:40PM, spring, clear and dry. (One injury)	23yr. old female, charged with reckless driving	Driver inattention- “Driver ran off road, struck bank and overturned.”

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* 26.	Eastern Virginia rural interstate (straight roadway)	Single vehicle, run off the road crash. Driver of auto talking on cell phone and allowed her vehicle to drift off the road, overturn, and collide with a tree. 9:25AM, spring, mist and damp. (Two fatalities)	42yr. old female, not charged due to being fatally injured.	Driver inattention- “Driver ran off road to left, overcorrected, and ran off road to right. Vehicle overturned and struck a tree.”
* 27.	Western Virginia rural secondary road (straight roadway)	Single vehicle, run off the road crash. Driver was looking to hang up cell phone after conversation and allowed her SUV to collide with tree. 8:55AM, summer, clear and dry. (One injury)	51yr. old female, charged with reckless driving.	Driver inattention- “Driver ran off of right side of road and struck some trees.
* 28.	Northern Virginia rural primary route (highway curve)	Offset head-on collision between a van and dump truck. Driver of van was reading a map and allowed vehicle to cross centerlines and strike approaching truck. 12:15PM, spring, clear and dry. (Two injuries)	25yr. old male, driver charged with reckless driving.	Wrong side of road- “Vehicle number one crossed the centerlines and struck vehicle number two.”
* 29.	Western Virginia rural primary road (highway curve)	Single vehicle, run off the road crash. Driver was using cell phone and allowed pickup truck to run off road where it struck a fence and utility pole. 3:15PM, spring, clear and dry. (One fatality)	19yr. old male driver not charged due to being fatally injured.	Driver inattention- “Driver lost control of vehicle, ran off road and struck fence and pole.”
* 30.	Eastern Virginia rural primary intersection (straight roadway)	Angle collision between an SUV and pickup truck. SUV driver was distracted by passenger and dog , and ran through a stop sign and collided with pickup. 8:15PM, summer, clear and dry.(One fatality and two injuries)	47yr. old male driver charged with reckless driving.	Disregard stop sign- “Driver number one failed to stop at stop sign and flashing red lights and was struck by Veh. 2

***The last six crashes are reported in-depth in the six case studies in this Special Report.**