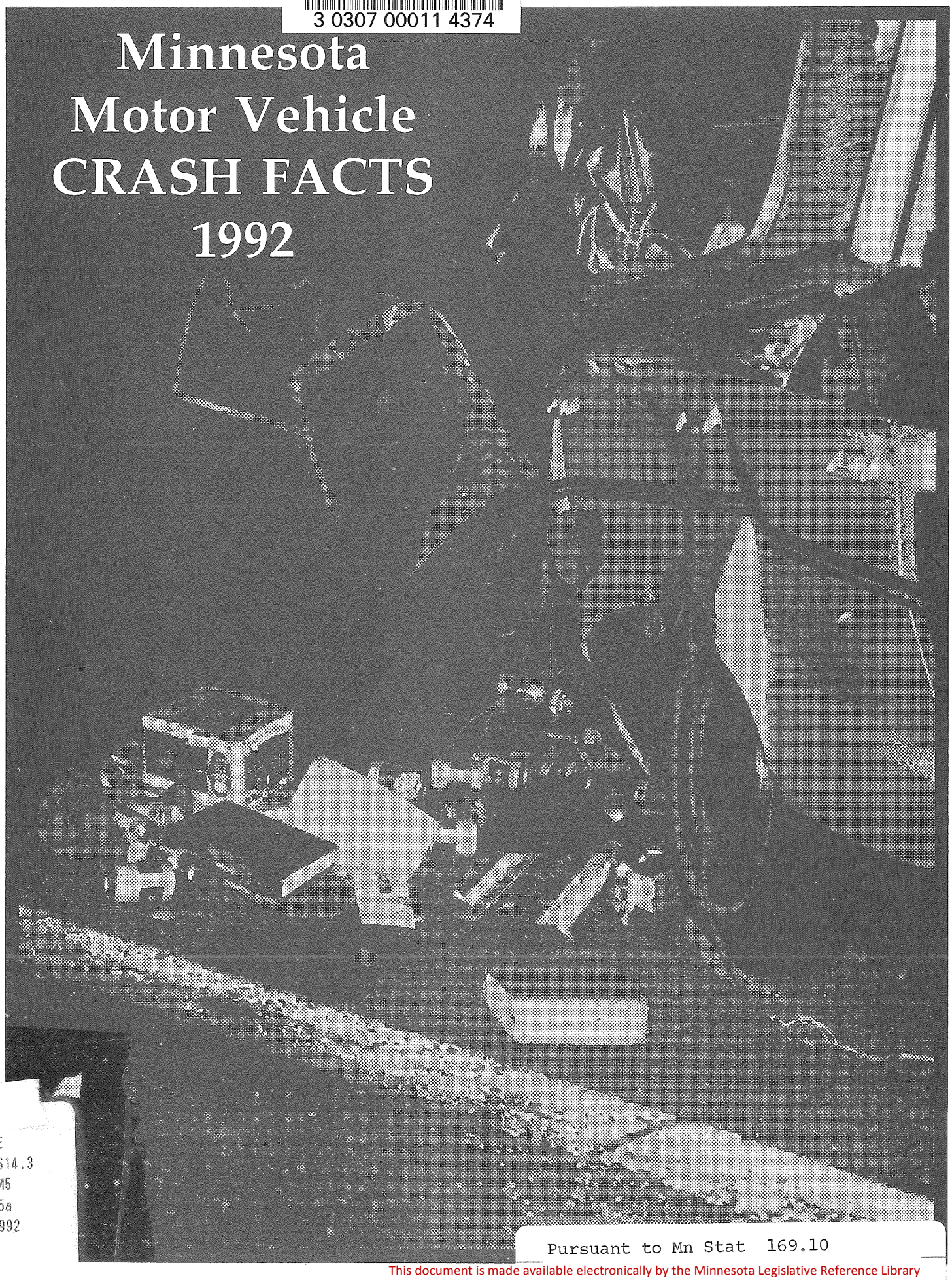
Minnesota Motor Vehicle CRASH FACTS 1992



MINNESOTA MOTOR VEHICLE CRASH FACTS 1992

A summary of crashes occurring on Minnesota roadways based upon accident reports submitted by investigating police officers and drivers to the Minnesota Department of Public Safety

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STATE OF MINNESOTA
DEPARTMENT OF PUBLIC SAFETY

July 1993

Minnesota has always been recognized as a leader in traffic safety. During the last 20 years, state lawmakers have enacted tough DWI and passenger restraint laws, education and prevention efforts have increased, and the number of traffic fatalities and injuries have decreased. It would appear those efforts have paid off.

In 1992, 581 people were killed, and 43,249 others were injured on Minnesota roads and highways. These figures are both tragic and unnecessary. The simple acts of buckling your seat belt, obeying posted speed limits, and not drinking and driving can save your life and those of your passengers and fellow drivers. Regardless of the strictness of state law or the level of enforcement, however, traffic safety is still an individual responsibility.

When comparing 1992 statistics to 1991 figures, it's important to keep in mind several things. First, there were record or near-record low numbers of fatalities involving motorcycles, pedestrians, and bicycles in 1992. Still, there was close to a 10 percent increase in the total number of traffic fatalities over the previous year. Much of that increase can be attributed to the weather during the last two months of 1991. November of 1991 produced the "Halloween Blizzard", resulting in fewer motorists on the road travelling at high speeds, thus reducing the number of fatalities. In fact, the reduction in the number of fatalities in November of 1991 was the primary reason that year was the second lowest in almost 50 years in terms of traffic fatalities. November of 1992 marked a return to an average number of crashes, injuries, and fatalities, hence an overall increase in fatalities for the entire year.

The Department of Public Safety is committed to implementing programs to promote traffic safety, educate the driving public, prevent crashes, and enforce traffic safety laws. The partnership formed with the State Patrol and other law enforcement agencies has been vital in making Minnesota one of the safest states in the nation. That partnership will continue and will be enhanced in the future to ensure safe travel in years to come.

Sincerely,

Michael S. Jordan
Commissioner

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DEFINITIONS

Accident -- See motor vehicle crash.

Alcohol Concentration -- The level of alcohol in a person's body as measured by blood, breath, or urine.

Alcohol-Related Fatal Crash -- A crash that results in one or more deaths and in which the investigating officer suspected alcohol involvement or in which the results of an alcohol concentration test were positive for any driver, pedestrian, or bicyclist involved in the crash.

Alcohol-Related Fatality -- A death resulting from an alcohol-related crash.

Alcohol-Related Injury -- A non-fatal injury resulting from an alcohol-related crash.

Alcohol-Related Injury Crash -- A non-fatal crash in which one or more persons are injured and in which the investigating officer suspected alcohol involvement for any driver, pedestrian, or bicyclist involved in the crash. (Since only the officer's perception is used in this definition, alcohol-related injury crashes and injuries are probably underestimated.)

Alcohol-Related Property Damage Crash -- A crash in which no one is killed or injured and the investigating officer suspected alcohol involvement for any driver, pedestrian, or bicyclist involved in the crash.

Bicycle Crash -- A motor vehicle crash involving one or more bicycles.

Child Safety Seats -- Safety devices designed to fit in motor vehicles that keep children securely in place. The seats are required by law for children under four years of age.

Crash -- See motor vehicle crash.

Driver -- The occupant of a motor vehicle who is in actual physical control of the vehicle in transit or, for an out-of-control vehicle, the occupant who was in control before control was lost.

Economic Loss -- An approximation of the costs associated with crashes, based upon current National Safety Council estimates of the loss to society for each fatality, injury, and property damage crash.

Fatal Crash -- A motor vehicle crash on a public traffic-way in which at least one person dies unintentionally as a result of the crash. The death must occur within 30 days of the crash.

First Harmful Event -- The first event during a crash that caused injury or property damage.

Injury Severity

Fatal Injury -- An injury that results in an unintentional death within 30 days of the crash.

Severe or Incapacitating Injury -- An injury (other than fatal) that prevents the injured person from walking, driving or normally continuing the activities he or she was capable of performing before the injury occurred. Includes severe lacerations, broken or distorted limbs, skull fracture, crushed chest, internal injuries, unconsciousness, etc. Hospitalization is usually required.

Moderate/Non-Incapacitating injury -- An injury (other than fatal or severe) that is evident to the officer at the scene of the crash. Includes abrasions, minor lacerations, bleeding, etc. May require medical treatment, but hospitalization is usually not required.

Minor or Possible Injury -- An injury (other than fatal, severe, or moderate) that is reported by a person involved in the crash. Includes complaint of physical pain when no cause is evident, momentary unconsciousness, limping, nausea, hysteria, etc.

Motorcycle -- A two-wheeled or three-wheeled motor vehicle having one or more riding saddles and having an engine of more than 50 cc. If it has a 50 cc or smaller engine it is classified as a motorized bicycle or motorscooter/motorbike.

Motorcycle Crash -- A motor vehicle crash involving one or more motorcycles.

Motor Vehicle -- A self-propelled vehicle, including attached trailers and semitrailers designed for use with such vehicles.

Motor Vehicle Crash -- A crash that involves a motor vehicle in transport on a public trafficway in Minnesota and results in injury, death, or at least $500.00 in property damage.

Occupant -- Any person who is in or on a vehicle, including the driver, passenger, and persons riding on the outside of the vehicle.

Occupant Restraints -- Protective devices used in motor vehicles to keep the driver and passengers in their seats and prevent them from being ejected from the motor vehicle in a crash. Restraint devices include lap belts, lap/shoulder harness combinations, air bags, and child safety seats.

Passenger -- Any occupant of a motor vehicle other than the driver.

Pedestrian -- Any person not in or on a motor vehicle or other vehicle (e.g., a bicycle).

Pedestrian Crash -- A motor vehicle crash involving one or more pedestrians.

Restraint Usage -- An occupant's use of available vehicle restraints including lap belt, lap/shoulder combination harness, or child safety seats.

Rural -- Having a population of under 5,000.

School Bus Crash -- A crash involving one or more school buses.

Trafficway -- Any land way open to the public as a matter of right or custom for moving persons or property from one place to another.

Train/Motor Vehicle Crash -- A motor vehicle crash involving a motor vehicle in transport and a railway train. Presently, the only crashes classified as train crashes are those in which the first harmful event is collision with a train.

Truck Crash -- A motor vehicle crash involving one or more vehicles of the following types: (1) 2-axle, 6-tire single unit truck or stepvan, (2) 3-or-more-axle single unit truck, (3) single-unit truck with trailer, (4) truck tractor with no trailer, (5) truck tractor with semi-trailer, (6) truck tractor with double trailers, (7) truck tractor with triple trailers, (8) heavy truck of other or unknown type. Pickup trucks and vans are not counted as trucks.

Urban -- Having a population of 5,000 or more.

INTRODUCTION

At the end of the 1992 calendar year, 3,273,957 people held Minnesota driver licenses and 3,545,542 motor vehicles were registered in the state. Vehicles traveled over 40 billion miles on public roadways in the state. There were 96,808 traffic crashes; 581 people died and 43,249 people were injured in those crashes. This report provides a statistical summary of those crashes.

The purpose of *Crash Facts* is to provide summary statistical information about the crashes reported to the state each year. The term "crash" is used in preference to "accident." The latter term suggests there is a random, unavoidable quality about the events in question. In fact, though, the experience of the last two decades potently demonstrates that advances in engineering and technology, coupled with changes in public policy and individual human behavior, can dramatically reduce the number and severity of traffic crashes.

Cost of Traffic Crashes

The necessity of getting from one place to another and the efficiency of motor vehicles for this purpose result in significant costs to society. The National Safety Council reports that accidents (from all causes) are the leading cause of death among persons aged 1 to 37 and the fourth leading cause of death among all persons (*Accident Facts, 1991 Edition,* p. 6).

It is possible to estimate economic costs of traffic crashes, although the results can vary depending on definitions and estimating procedures. Many states use the National Safety Council's economic cost figures, the most recent of which are based on 1991 data. Based on those, the total economic loss from 1992 traffic crashes in Minnesota was $965,786,800 a figure which is calculated as follows:

Cost of Motor Vehicle Crashes in 1992

581	deaths	@$450,000	=$261,450,000
4,391	severe injuries	@ $42,400	=$186,178,400
14,554	moderate injuries	@ $10,700	=$155,727,800
24,304	minor injuries	@ $3,300	= $80,203,200
67,197	property damage crashes	@ $4,200	=$282,227,400
		Total	=$965,786,800

Factors Influencing Crash Incidence and Severity

A conceptual model will help to think about the traffic crash problem, and ways to reduce it. Many factors may contribute to even a single crash. A domestic quarrel may lead to driver distraction, which together with wet, slippery pavement and high traffic congestion at an intersection causes a traffic crash. Public policy cannot address the infinite number of individual causes imaginable.

There is a more limited number of factors that significantly affect the aggregate of traffic crashes. These can be organized into logical groups, such as human behavior factors or vehicle safety factors. The following paragraphs outline some of the factors most frequently thought to affect crash incidence and severity.

Vehicle Safety Factors: Engineering and design standards for vehicle performance can help prevent crashes from occurring. When there is a crash, vehicles designed for safety can increase survivability. For example, the design of windshield glass and the location and durability of gas tanks can increase safety. The "passenger packaging" inside a vehicle can reduce injury severity through means such as padded dashboards and collapsible steering wheel columns. Passenger protection systems in vehicles (airbags, safety belts, etc.), if used, can eliminate injuries or reduce their severity.

Behavior factors: For all crashes, the driver behaviors police cite most often as contributing factors are, in order of frequency, driver inattention or distraction, failure to yield right of way, and illegal or unsafe speed. In fatal crashes, illegal or unsafe speed is cited most often, followed by physical impairment (usually by alcohol). Reducing these behaviors would reduce crashes. When there is a crash, using safety equipment will reduce severity. Motorcyclists and bicyclists should wear helmets. Vehicle occupants should use safety belts. Infants should always be placed in child safety seats.

Roadway characteristics: Limited access highways carry about a fifth of the traffic volume in Minnesota, yet account for only about a twelfth of fatal accidents. They are built to high roadway engineering standards and are very safe, relatively speaking. In general, roadway characteristics conducive to safety include wide lanes, clearly visible striping, flared guardrails, wide shoulders of good quality, shoulders and roadsides free of obstacles, well-located crash attenuation devices, well-planned use of traffic signals, and effective communication to roadway users through clear and visible signing.

Environmental factors: Weather conditions affect crash incidence and severity. Clear dry roads are conducive to high speeds; consequently, fatal crashes have a pronounced seasonal variation, peaking in the warm summer months and falling in the winter months. The total number of crashes is driven by the incidence of the less serious property damage crashes, which tend to have a reverse seasonal variation, peaking in the winter months.

Volume of traffic, or vehicle miles traveled (VMT), is a predictor of crash incidence. All other things being equal, as VMT increases, so will traffic crashes. The relationship may not be simple, however; after a point, increasing congestion leads to reduced speeds, changing the proportion of crashes that occur at different severity levels.

The quality and availability of emergency medical services might be classified as an environmental factor. The first hour after a traumatic episode, such as a traffic crash, has been called the "golden hour." Victims who receive emergency services within that time have markedly improved chances of survival.

The age structure of the population has a strong effect on crash incidence, although it is not generally thought about since demographic changes are so gradual. In Minnesota, about one in eight teenaged drivers are involved in crashes each year. The involvement rate drops off for successive age groups. For example, it is about 1 in 25 for drivers in their forties. The aging of the baby boom has reduced crash incidence.

Historical Perspective

In 1966, there were 53,041 traffic fatalities in the country, or 5.7 for every hundred million miles of travel. In Minnesota in 1968, there were 1,060 traffic fatalities, or 5.3 per hundred million miles of travel. Those were the worst years. Since then, both the rate and the number of fatalities have declined in a fairly steady pattern. Last year, there were 39,200 traffic fatalities throughout the country and 581 in Minnesota. The respective rates per hundred million miles of travel were 1.8 and 1.41. A dramatic benefit has been achieved.

The benefit is in large part the result of conscious decision-making on traffic safety issues. The National Highway Traffic Safety Administration (originally called the National Safety Bureau) was established in the U.S. Department of Transportation in 1967. Since then it has promoted, and Congress has passed, legislation mandating the manufacture of safer cars. At the same time, the federal interstate highway system has expanded, contributing to a safer roadway environment.

Simultaneously there has been an effort to change human behavior factors. Minnesota has been a leader among the states in the development of innovative drunk driving countermeasures. The Legislature made significant amendments to the DWI law in 1971, 1976, 1978, and in almost every year of the 1980s. It also passed the child passenger protection law in 1981, and the mandatory seat belt law in 1986. It subsequently amended those laws, closing loopholes, broadening their scope, and strengthening penalties.

The benefits of action in these areas are clear. The graph shown in Figure 1 is one illustration. It shows a steady increase in the number of drivers and vehicles, but a steady decrease in the fatality rate per hundred million miles of travel.

Legislative requirement

Minnesota Motor Vehicle Crash Facts is produced annually by the Office of Traffic Safety, Minnesota Department of Public Safety, in accordance with state law. Minnesota Statutes, Section 169.09, requires that traffic crashes be reported to the Department. Section 169.10 then requires the Department to ". . . tabulate . . . all accident reports . . . and publish annually . . . statistical information based thereon as to the number and circumstances of traffic accidents."

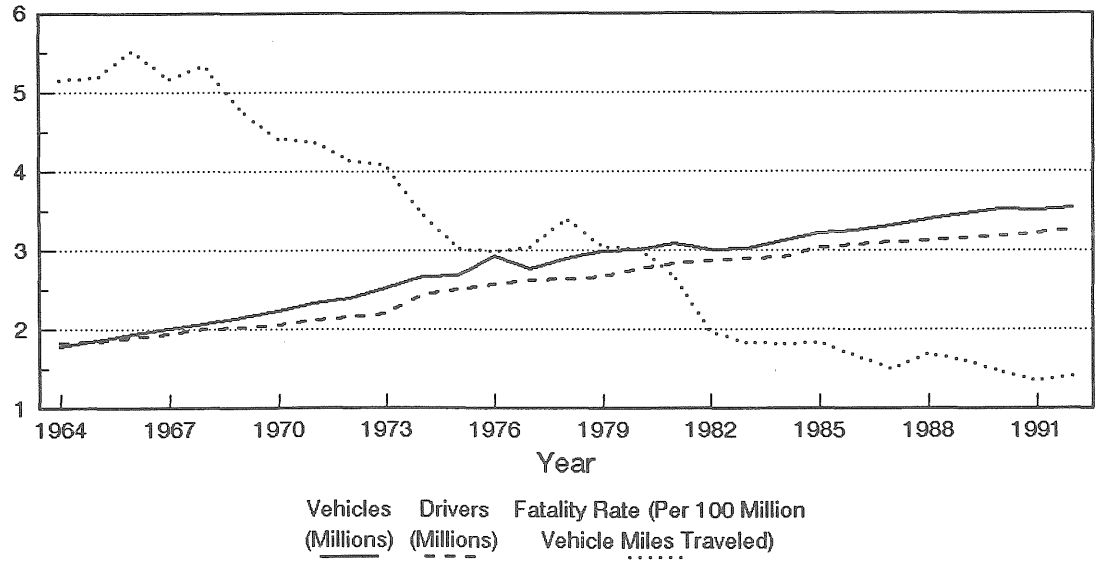
Section 169.09 specifies that a driver involved in an accident that results in injury to or death of any person or total property damage of $500 or more must submit a report within ten days of the crash. The law enforcement officer who investigates the crash must also submit a report within ten days.

The minimum dollar amount for crashes involving only property damage has changed over the years. The first minimum was set at $50 in 1939. It was raised to $100 in 1965, to $300 in 1976, and then to the current minimum of $500 in 1981.

Crash Facts is divided into nine sections. The first presents information on the aggregate of all crashes reported to the state during the preceding calendar year. The remaining eight sections focus on specific areas of interest to policy makers and the public. Section II deals with alcohol-related crashes. Section III is about the use of safety equipment by occupants of vehicles required to be equipped with passenger protection systems, including child safety seats and safety belts. The following five sections focus on crashes that involved motorcycles (section IV), trucks (section V), pedestrians (section VI), bicycles (section VII), and school buses (section VIII). The final section (IX) summarizes information on collisions between motor vehicles and trains.

FIGURE 1

Vehicles, Drivers, and Fatality Rate, 1964--1992



I: ALL CRASHES

1992 CRASHES

The 1992 calendar year differed from the preceding calendar year. Total crashes went down 5% (to 96,808) from 1991, but fatal crashes went up 5% (to 494). In all, for 1992, 581 people died and 43,249 were injured in traffic crashes. Weather factors may have indirectly played a role in these statistics. In 1991, over 60 inches of snow fell in the metro area in the last three months of the year. This inhibited travel, and vehicle miles traveled in the state increased only 1.3% from 1990. In 1992, by contrast, miles traveled increased over 5% (to 4.13 billion) from 1991. Road conditions were better; people drove more, and had fewer minor crashes, but more fatal crashes. The fatality rate per hundred million miles of travel was 1.41. This is one of the lowest rates in the country. Only some of the New England states consistently have lower rates than Minnesota's. The rate per 100,000 population was 13.0. The following sections give an overview of crash statistics, focusing especially on who was involved and what the conditions were, and then more briefly describing where and when the crashes occurred.

WHO was involved

Among drivers, young people and males are overrepresented

There are 3,273,957 licensed drivers in the state; 164,665 (about 1 in 20) of them were involved in a traffic crash in 1992. Fifteen to 29 year olds make up 27% of the licensed drivers in the state, yet they accounted for 41% of the crash-involved drivers. Teenage drivers are the worst, from this perspective. In 1992, they represented 7% of the licensed drivers, but 14% of the crash-involved drivers. By contrast drivers over 65 made up 14% of the driving population, but accounted for 7% of the crash-involved drivers in 1992. Crash-involved drivers are also more likely to be males: 74% of drivers in fatal crashes were male; 59% of drivers in all crashes were male.

Among crash victims, young are over-represented

Traffic crashes are a leading cause of death to young people. In the state last year, 224 people aged 15 to 29 died in crashes. That represents 39% of all traffic deaths. People over 65 were also overrepresented in that they make up 13% of the state's population but accounted for 22% of the traffic fatalities.

Among people injured, young people especially pay a price. There were 18,366 people aged 15 to 29 who were injured; that represents 42% of the total number of people injured. Fifteen to nineteen year olds (7% of the state's population) accounted for 17% of the traffic injuries.

Driver age and contributing factors

About one-third of all crashes involve only one vehicle and about two-thirds involve two or more vehicles. Single-vehicle and multiple-vehicle crashes have different characteristics. In single vehicle crashes, "illegal or unsafe speed" is the contributing factor cited most often for drivers through age 35. For drivers over 35, "driver inattention or distraction" is cited most often. "Physical impairment" (typically meaning alcohol impairment) is the second or third most cited factor for all age groups after age 20. In multiple-vehicle crashes, for drivers through age 65, "driver inattention or distraction" is cited most often, and "failure to yield right of way" is cited second most often. After age 65, the pattern reverses: failing to yield is most common, and inattention or distraction is second most common. For the under-65 drivers, two additional contributing factors are also frequently cited. These are "following too closely" and "illegal or unsafe speed."

WHAT the conditions were

Victims are mostly car and pickup occupants

Of the 581 traffic fatalities, 464 (80%) were passenger car or pickup truck occupants. There were also 46 pedestrians, 28 motorcyclists, 15 van occupants, and 11 bicyclists who died in traffic crashes. There were no deaths among

school bus occupants, and only 5 fatalities among truck occupants. There is a somewhat similar pattern among people who were injured: of the 43,249 injured, 82% were car or pickup occupants, and the remainder were from several categories, mainly van occupants, motorcycle riders, pedestrians, and bicyclists.

Collision with other vehicle is leading crash type

Almost half (47%) of the fatal crashes and almost two-thirds (65%) of all crashes involve one vehicle colliding with another vehicle. In fatal and injury crashes, collisions with fixed objects and overturns are also common. For property damage crashes, the other leading crash types are collision with fixed object (10% of the total), collision with deer (9% of the total), and collision with a parked motor vehicle (8% of the total).

Physical impairment and driver inattention were leading factors

Police may indicate from zero to two contributing factors for each driver in a crash. In fatal crashes, four factors were cited relatively frequently. These were "physical impairment," "illegal or unsafe speed," "failure to yield right of way," and "driver inattention or distraction." The first two each accounted for 14% of all factors cited, the second two each accounted for 12%. (It is known that the officer's reported perception of alcohol involvement, reflected in the "physical impairment" factor, is a conservative measure of the role of alcohol in fatal crashes.) In injury and property damage crashes, there are three factors that stand out from the rest. These are "driver inattention or distraction," "failure to yield right of way," and "illegal or unsafe speed," accounting for about 21%, 16% and 11%, respectively, of all factors cited.

Most crashes occur in good driving conditions

Almost half (49%) of fatal crashes, and 60% of nonfatal crashes occurred during daylight hours. Road surface conditions where crashes occurred were usually good. For fatal crashes, 72% were on dry roads, 13% were on wet roads, and only 12% were on snowy or icy roads. For nonfatal crashes, 61% were on dry roads, 16% on wet roads, and 16% on snowy or icy roads.

WHERE they happened

Fatal crashes are rural, other crashes urban

Fatal crashes tend to occur on roads in rural areas that permit high speeds and do not have interstate-type safety designs. Last year, 365 (74%) of all fatal crashes occurred on trunk or county state aid highways, and 287 of those were in rural areas. The injury and property damage crashes are more common in urban areas. Over two-thirds of them happened inside cities of 5,000 or more population. The seven county metro area, with over half the state's population, accounted for only 26% of the fatal crashes, but 57% of all crashes.

WHEN they occurred

Fatal crashes peak at midnight, total crashes peak in the late afternoon

Fatal crashes climbed erratically from a low in the early morning (from 4:00 to 5:00 AM) to a series of peaks in the late afternoon and evening. The single hour of the day with the most fatal crashes was the hour from midnight to 1:00 AM. Total crashes were more concentrated in the late afternoon: 24% occurred in the three hours from 3:00 to 6:00 PM. Fridays and Saturdays had the most fatal crashes (together accounting for 36%). Total crashes are more evenly distributed across days of the week, though Fridays had the most (17%) and Sundays had the least (11%). In most years, fatal crashes follow a strong seasonal pattern, peaking in the summer months. In 1992, the whole second half of the year was high: 62% of fatal crashes occurred from July through December. The three highest months for nonfatal crashes were October, November, and December.

TABLE 1.01

CRASH, FATALITY, AND INJURY SUMMARY, 1983 - 1992

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Traffic Crashes	97,371	93,741	99,168	95,460	94,095	102,094	105,996	99,236	101,419	96,808
Persons Killed	558	584	610	572	530	615	605	568	531	581
Persons Injured	41,086	41,808	44,316	42,130	42,091	44,415	45,404	44,634	42,748	43,249
Registered Motor Vehicles (Millions of Vehicles)	3.03	3.13	3.22	3.25	3.31	3.39	3.46	3.52	3.51	3.55
Licensed Drivers* (Millions of Drivers)	2.90	2.91	3.04	3.07	3.10	3.13	3.16	3.18	3.22	3.27
Vehicular Miles Traveled (Billions of Miles)	30.5	32.2	33.1	34.2	35.1	36.4	37.6	38.8	39.3	41.3
Fatality Rate Per Hundred Million Vehicle Miles Traveled	1.83	1.81	1.84	1.67	1.51	1.69	1.61	1.47	1.35	1.41
Fatality Rate Per 100,000 Registered Motor Vehicles	18.4	18.7	18.9	17.6	16.0	18.1	17.5	16.1	15.1	16.4
Fatality Rate Per 100,000 Population	13.5	14.1	14.7	13.6	12.6	14.3	13.9	13.0	12.0	13.0
Crash Rate Per Hundred Million Vehicle Miles Traveled	319	291	300	279	268	280	282	256	258	235
Crash Rate Per 100,000 Registered Vehicles	3,214	2,995	3,080	2,937	2,840	3,012	3,060	2,817	2,890	2,730
Crash Rate Per 100,000 Population	2,356	2,262	2,380	2,266	2,233	2,371	2,435	2,268	2,288	2,161

* Permits included.

TABLE 1.02

TRAFFIC CRASH TRENDS
1987 - 1992

	1987	1988	1989	1990	1991	*1987-1991 Average*	1992	% Change from 5 Yr Average	Record High	
Total Crashes	**94,095**	**102,094**	**105,996**	**99,236**	**101,419**	*100,568.0*	**96,808**	**-3.7**	**123,106**	**(1975)**
Fatal Crashes	**466**	**545**	**539**	**503**	**469**	*504.4*	**494**	**-2.1**	**878**	**(1973)**
Injury Crashes	**29,345**	**30,743**	**31,576**	**30,684**	**28,890**	*30,247.6*	**29,117**	**-3.7**	**33,686**	**(1978)**
Severe	4,566	4,386	4,111	4,016	3,356	*4,087.0*	3,387	-17.1	5,109	(1984) [1]
Moderate	11,517	11,066	11,057	10,641	10,421	*10,940.4*	10,204	-6.7	12,326	(1985) [1]
Minor	13,262	15,291	16,408	16,027	15,113	*15,220.2*	15,526	+2.0	16,408	(1989) [1]
Property Damage Crashes	**64,284**	**70,806**	**73,881**	**68,049**	**72,060**	*69,816.0*	**67,197**	**-3.8**	**94,810**	**(1975)**
Total Injuries	**42,091**	**44,415**	**45,404**	**44,634**	**42,748**	*43,858.4*	**43,249**	**-1.4**	**50,332**	**(1978)**
Severe	5,557	5,501	5,148	5,015	4,302	*5,104.6*	4,391	-14.0	6,573	1984 [1]
Moderate	16,217	15,593	15,431	15,001	14,725	*15,393.4*	14,554	-5.5	17,670	1985 [1]
Minor	20,317	23,321	24,825	24,618	23,721	*23,360.4*	24,304	+4.0	24,825	1989 [1]
Total Fatalities	**530**	**615**	**605**	**568**	**531**	*569.8*	**581**	**+2.0**	**1,060**	**(1968)**
Pedestrian	62	69	67	65	61	*64.8*	46	-29.0	157	(1971)
Motor Vehicle/Train [2]	4	12	15	17	10	*11.6*	9	-22.4	62	(1932)
Bicycle	15	16	10	8	8	*11.4*	11	-3.5	24	(1977)
Motorcycle	51	58	37	50	40	*47.2*	28	-40.7	121	(1980)
3-Wheel Vehicle	2	1	5	2	6	*3.2*	1	-68.8	9	(1986)
Snowmobile	0	4	3	1	2	*2.0*	4	+100.0	9	(1984)
Motor Vehicle Occupants	396	459	478	431	405	*433.8*	484	+11.6	484	(1992) [1]
Fatality Rate [3]	1.51	1.69	1.61	1.47	1.35	*1.53*	1.41	-7.8	23.6	(1934)
U.S. Fatality Rate [3]	2.6	2.3	2.2	2.1	1.9	2.2	1.8	-18.2	18.0	(1925)
Minnesota Economic Loss (millions)	$506.4	$579.9	$619.0	$717.9	$834.1	*$651.5*	$965.8	+48.3	$965.8	(1992) [4]

[1] The available records on which these "record highs" are based only go back to 1984. [2] Fatalities occurring in motor vehicle/train crashes are included in other categories as well. [3] Rate is based upon per 100 million vehicle miles of travel. [4] The record economic loss is a function mainly of inflation rather than trends in traffic safety.

TABLE 1.03

1992 FATALITIES BY TRAFFIC ROLE, GENDER, AND AGE

Type of Vehicle	Position in Vehicle	Gender	Age 0-9	10-19	20-29	30-39	40-49	50-59	60-69	70 & Older	Total
Car or Truck	Driver	Male	0	23	68	48	23	20	13	27	222
		Female	0	13	15	13	12	8	4	27	92
	Passenger	Male	7	16	15	4	5	2	0	10	60
		Female	5	21	18	5	7	6	7	30	99
	Unknown	Male	0	5	3	0	0	0	0	1	9
		Female	0	1	0	0	0	0	0	1	2
Motorcycle	Operator	Male	0	4	10	6	2	1	0	0	23
		Female	0	0	0	0	0	0	0	0	0
	Passenger	Male	1	1	1	0	0	0	0	0	3
		Female	0	0	1	1	0	0	0	0	2
Motorscooter or Moped	Driver	Male	0	0	0	0	0	0	0	0	0
		Female	0	0	0	0	0	0	0	0	0
	Passenger	Male	0	0	0	0	0	0	0	0	0
		Female	0	0	0	0	0	0	0	0	0
All Terrain Vehicle	Driver	Male	0	1	0	0	0	0	0	0	1
		Female	0	0	0	0	0	0	0	0	0
	Passenger	Male	0	0	0	0	0	0	0	0	0
		Female	0	0	0	0	0	0	0	0	0
Snowmobile	Driver	Male	0	0	3	1	0	0	0	0	4
		Female	0	0	0	0	0	0	0	0	0
	Passenger	Male	0	0	0	0	0	0	0	0	0
		Female	0	0	0	0	0	0	0	0	0
Other Motor Vehicle**	Driver	Male	0	1	1	0	0	0	0	0	2
		Female	0	0	0	0	0	0	0	0	0
	Passenger	Male	1	0	1	0	0	0	0	0	2
		Female	0	1	0	0	0	0	0	0	1
	Unknown	Male	0	0	2	0	0	0	0	0	2
		Female	0	0	0	0	0	0	0	0	0
Bicyclist		Male	0	7	1	0	0	0	0	0	8
		Female	0	2	0	0	0	0	1	0	3
Pedestrian		Male	0	5	6	7	3	2	1	5	30
		Female	1	1	2	1	2	1	1	6	16
Total Fatalities		Male	9	63	111	66	33	25	14	43	366*
		Female	6	39	36	20	21	15	13	64	215*
		Total	15	102	147	86	54	40	27	107	581

* Included in the total column (but not in other columns) are one male passenger (of a passenger car) whose age was unknown, and one male pedestrian and one female pedestrian whose ages were unknown.

** "Other motor vehicle" includes "farm tractor or equipment" (3 fatalities), "other privately owned vehicle" (2 fatalities), "bus other than school bus" (1 fatality), and "other" vehicle type (1 fatality).

TABLE 1.04

AGE AND GENDER OF PERSONS KILLED OR INJURED IN 1992 CRASHES

	Persons Killed			Persons Injured		
Age Group	Male	Female	Total	Male	Female	Total*
0 - 4	3	5	8	432	354	793
5 - 9	6	1	7	791	670	1,470
10 - 14	18	7	25	954	867	1,826
15 - 19	45	32	77	3,535	3,686	7,230
20 - 24	66	22	88	3,301	3,018	6,326
25 - 29	45	14	59	2,446	2,356	4,810
30 - 34	44	14	58	2,146	2,105	4,258
35 - 39	22	6	28	1,692	1,715	3,412
40 - 44	19	10	29	1,282	1,390	2,678
45 - 49	14	11	25	940	994	1,936
50 - 54	16	7	23	689	773	1,466
55 - 59	9	8	17	533	584	1,119
60 - 64	5	3	8	437	549	988
65 - 69	9	10	19	406	481	888
70 - 74	8	18	26	362	415	778
75 - 79	15	20	35	291	372	663
80 - 84	16	18	34	162	234	396
85 & Older	4	8	12	125	147	272
Not Stated	2	1	3	710	960	1,940
Total	366	215	581	21,234	21,670	43,249

* Many totals do not add across because gender is not always indicated on the accident report.

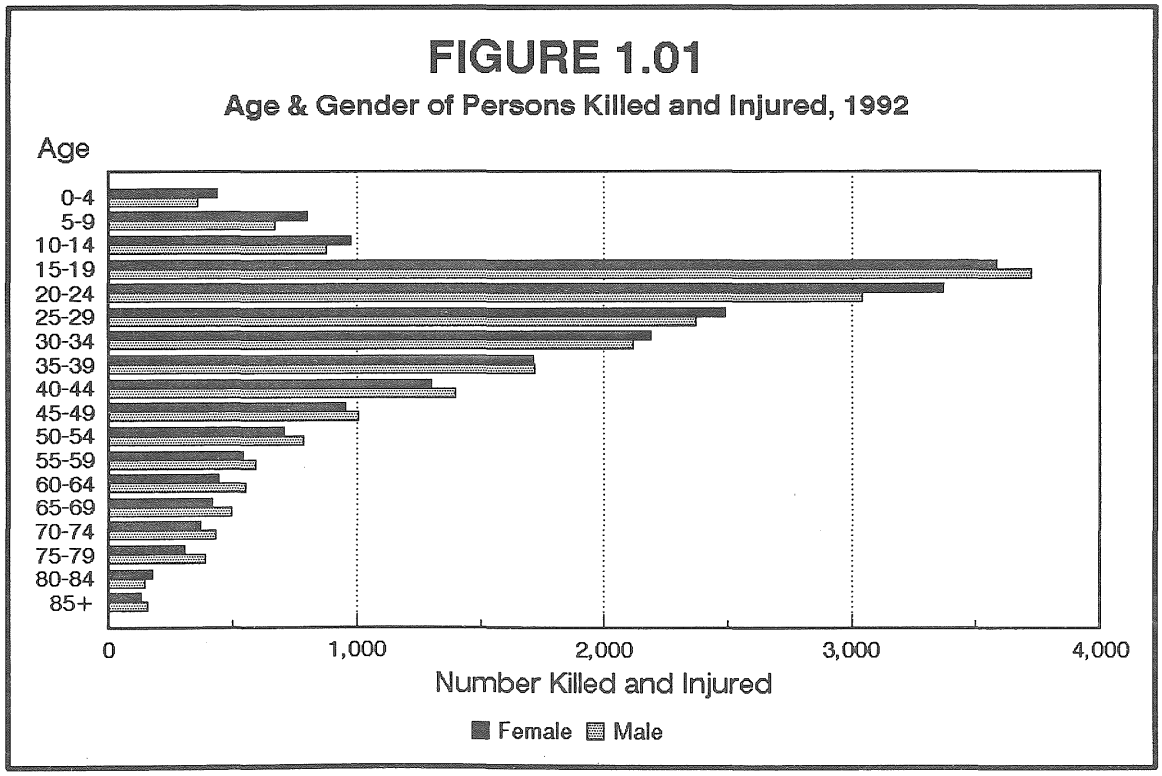


TABLE 1.05

DRIVERS IN 1992 CRASHES BY PHYSICAL CONDITION*

Physical Condition	Drivers in Fatal Crashes	Drivers in Injury Crashes	Drivers in Property Damage Crashes	Drivers in All Crashes
Normal	416	40,423	73,714	114,553
Under the Influence	71	2,211	1,840	4,122
Had Been Drinking	70	1,499	1,373	2,942
Had Been Using Drugs	2	39	31	72
Asleep	8	328	307	643
Fatigued	2	115	134	251
Ill	5	129	77	211
Other	7	187	215	409
Unknown	179	6,393	34,890	41,462
Total	760	51,324	112,581	164,665

* As noted by police officer on accident report. Pedestrians and bicyclists are not included.

TABLE 1.06

DRIVERS IN 1992 CRASHES BY AGE AND FIRST HARMFUL EVENT IN CRASH

First Harmful Event	Drivers 15-19	Drivers 20-24	Drivers 25-29	Drivers 30-34	Drivers 35-64	Drivers 65-79	Drivers 80 & Older
Collision With:							
Other Motor Vehicle	75.2%	77.8%	80.4%	79.3%	80.9%	85.1%	85.0%
Parked Motor Vehicle	3.5	2.7	2.6	2.7	2.4	2.9	4.7
Railroad Train	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bicycle	0.6	0.6	0.6	0.7	0.8	0.9	1.0
Pedestrian	0.8	0.7	0.7	0.8	0.8	0.9	1.0
Deer	2.3	3.4	4.0	5.0	5.7	3.2	2.0
Other Animal	0.4	0.4	0.3	0.5	0.5	0.3	0.1
Fixed Object	9.8	8.5	6.6	6.2	4.8	3.8	4.0
Falling Object	0.2	0.2	0.2	0.3	0.3	0.2	0.1
Non-Collision:							
Overturn	5.6	4.1	3.1	3.1	2.4	1.5	0.9
Other Non-Collision	0.1	0.1	0.2	0.1	0.1	0.1	0.0
Other or Unknown	1.3	1.4	1.1	1.3	1.2	1.0	1.1
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Drivers	22,418	23,645	20,652	19,150	55,300	9,573	2,458

Percentages are based on the number of crash-involved drivers in each age group. They may not sum to 100 due to rounding. Bicyclists and pedestrians are not included.

TABLE 1.07

AGE AND GENDER OF DRIVERS IN 1992 CRASHES*

	Drivers in Fatal Crashes				Drivers in All Crashes			
Age Group	Male	Female	Not Stated	Total	Male	Female	Not Stated	Total
14 & Younger	2	0	0	2	152	53	1	206
15 - 19	65	27	0	92	13,265	9,118	35	22,418
20 - 24	87	22	0	109	14,068	9,529	48	23,645
25 - 29	76	20	0	96	12,542	8,050	60	20,652
30 - 34	78	21	0	99	11,394	7,709	47	19,150
35 - 39	57	14	0	71	9,513	6,546	34	16,093
40 - 44	39	10	0	49	7,828	5,240	24	13,092
45 - 49	36	13	0	49	5,786	3,706	18	9,510
50 - 54	24	12	0	36	4,254	2,583	10	6,847
55 - 59	21	6	0	27	3,446	1,851	11	5,308
60 - 64	15	6	0	21	2,880	1,563	7	4,450
65 - 69	14	4	0	18	2,395	1,343	3	3,741
70 - 74	13	12	0	25	2,037	1,248	7	3,292
75 - 79	14	12	0	26	1,524	1,011	5	2,540
80 - 84	14	11	0	25	933	601	4	1,538
85 & Older	7	3	0	10	625	290	5	920
Not Stated	0	1	4	5	4,903	2,688	3,672	11,263
Total*	562	194	4	760	97,545	63,129	3,991	164,665

* Most crashes involve more than one driver, causing the total number of drivers to exceed the total number of crashes. (Pedestrians and bicyclists are not shown in this table.)

TABLE 1.08

LICENSED VS. CRASH-INVOLVED DRIVERS BY AGE, 1992

Age Group	Percentage of All Licensed Drivers	Percentage of Drivers in Fatal Crashes	Injury Crashes	Property Damage Crashes	All Crashes
14 & Younger	0.0%	0.3%	0.2%	0.1%	0.1%
15 - 19	6.7	12.1	14.7	13.1	13.6
20 - 24	9.4	14.3	15.4	13.9	14.4
25 - 29	10.5	12.6	13.1	12.3	12.5
30 - 34	12.4	13.0	12.0	11.4	11.6
35 - 39	11.7	9.3	10.0	9.7	9.8
40 - 44	10.2	6.4	7.9	8.0	8.0
45 - 49	8.2	6.4	5.8	5.8	5.8
50 - 54	6.4	4.7	4.1	4.2	4.2
55 - 59	5.2	3.6	3.2	3.3	3.2
60 - 64	4.8	2.8	2.7	2.7	2.7
65 - 69	4.6	2.4	2.3	2.3	2.3
70 - 74	3.9	3.3	2.0	2.0	2.0
75 - 79	3.0	3.4	1.6	1.5	1.5
80 - 84	1.9	3.3	0.9	0.9	0.9
85 & Older	1.1	1.3	0.5	0.6	0.6
Not Stated	0.0	0.7	3.5	8.4	6.8
Total Percent*	100.0%	100.0%	100.0%	100.0%	100.0%
Total Number**	3,273,957	760	51,324	112,581	164,665

* Percents may not sum to 100 due to rounding.
** Includes drivers with instruction permits.

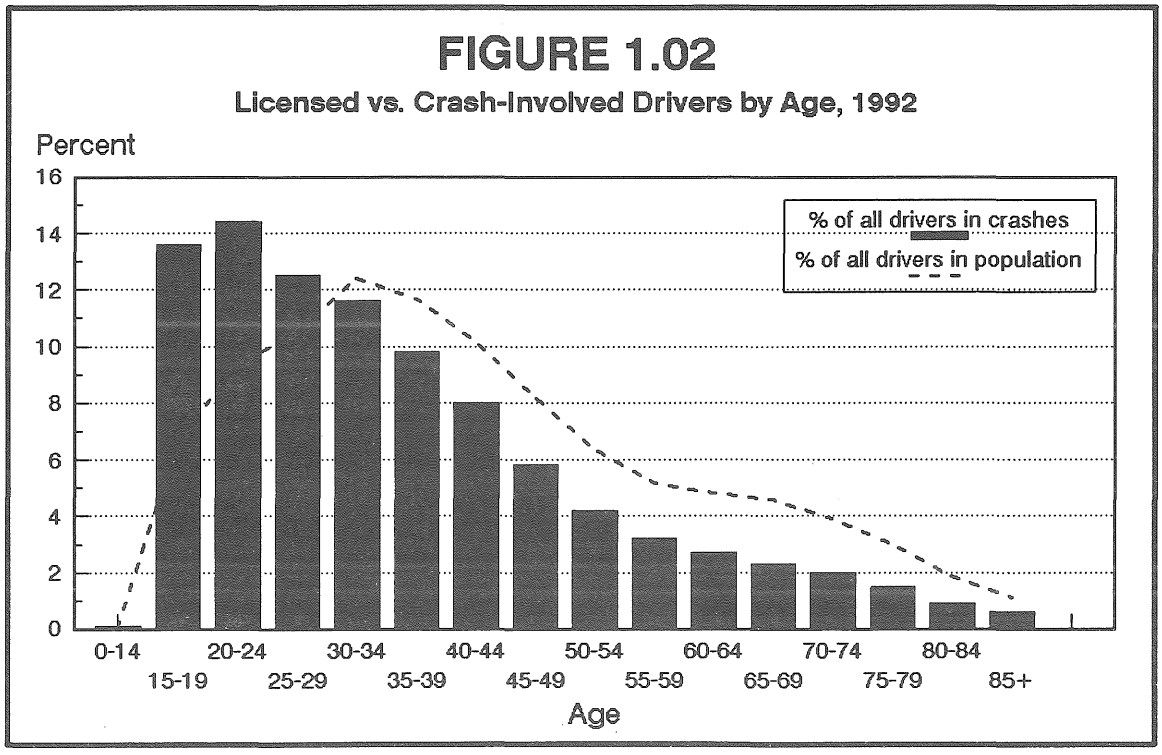


TABLE 1.09

SINGLE-VEHICLE CRASHES: CONTRIBUTING FACTORS, BY PERCENT, WITHIN DRIVER AGE GROUPS, 1992

Contributing Factors	Drivers 15-19	Drivers 20-24	Drivers 25-29	Drivers 30-34	Drivers 35-64	Drivers 65-79	Drivers 80 & Older
Human Factors							
Illegal/Unsafe Speed	23.4%	23.4%	20.5%	18.0%	15.0%	7.0%	3.6%
Driver Inattention/Distraction	15.7	16.2	16.3	16.5	17.7	24.4	23.1
Physical Impairment	6.0	14.8	14.4	15.1	10.9	12.0	12.1
Driver Inexperience	18.3	4.2	1.9	2.1	1.7	1.2	0.8
Improper/Unsafe Lane Use	3.6	4.6	4.7	5.1	4.6	6.5	7.2
Failure to Yield Right of Way	2.6	3.4	4.0	3.3	5.0	5.6	6.3
Unsafe Backing	1.3	1.2	1.7	1.9	1.9	3.7	6.1
Driving Left of Center--Not Passing	1.5	1.7	1.8	1.7	1.3	1.6	1.4
Vision Obscured	1.1	1.3	1.4	1.8	2.3	3.0	3.9
Improper Turn	1.0	1.0	1.1	1.2	1.6	1.9	1.9
Improper Parking/Starting/Stopping	0.7	0.6	1.1	0.9	1.1	3.3	4.1
Disregard for Traffic Control Device	0.6	1.2	0.9	1.0	1.1	1.2	0.8
Improper Passing/Overtaking	0.7	0.7	0.8	0.6	0.4	0.6	2.2
Following Too Closely	0.5	0.8	1.0	0.9	0.7	0.5	0.3
Failure to Use Lights	0.1	0.2	0.1	0.1	0.2	0.0	0.0
Other Human Factors	2.0	2.3	2.5	2.8	2.9	4.6	6.9
Vehicular Factors							
Skidding	8.1	7.6	7.4	7.9	9.5	6.7	5.2
Defective Equipment	1.3	1.2	1.3	1.7	1.8	1.6	1.1
Other Vehicular Factor	1.2	1.2	1.5	1.4	2.0	1.1	0.6
Miscellaneous Factors							
Weather	6.7	8.8	10.5	11.2	12.5	7.8	7.4
Other	3.7	3.4	5.2	4.7	5.8	5.7	5.0
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Contributing Factors Cited	6,736	5,535	3,710	3,320	7,573	1,079	363
Drivers for Whom There Was "No Clear Contributing Factor"	1,022	1,303	1,216	1,402	4,053	482	92
Total Number of Drivers	5,549	5,261	4,058	3,969	10,558	1,428	369

Percentages are based on all contributing factors cited within each age group. Zero, one, or two contributing factors may be associated with each driver. The percentages may not sum to 100 due to rounding. Contributing factors for bicyclists and pedestrians are excluded. Contributing factors with a frequency of less than one-tenth of one percent (for all age groups combined) are merged into the category "other human factors."

For contributing factors in multiple-vehicle crashes, see Table 1.10. For contributing factors in crashes at different levels of severity, see Table 1.20.

TABLE 1.10

MULTIPLE-VEHICLE CRASHES: CONTRIBUTING FACTORS, BY PERCENT, WITHIN DRIVER AGE GROUPS, 1992

Contributing Factors	Drivers 15-19	Drivers 20-24	Drivers 25-29	Drivers 30-34	Drivers 35-64	Drivers 65-79	Drivers 80 & Older
Human Factors							
Driver Inattention/Distraction	23.2%	24.4%	23.6%	23.6%	23.0%	23.2%	21.7%
Failure to Yield Right of Way	19.4	17.7	18.0	18.1	21.8	32.4	37.1
Following Too Closely	9.5	11.1	11.2	10.5	8.5	4.6	3.7
Illegal/Unsafe Speed	9.7	10.4	10.3	8.8	7.3	3.9	2.9
Disregard for Traffic Control Device	4.0	5.4	4.6	4.3	4.7	6.4	6.0
Improper/Unsafe Lane Use	3.8	4.0	4.5	5.1	4.7	5.8	5.3
Improper Turn	2.7	2.6	2.5	2.6	3.4	4.6	5.7
Vision Obscured	2.8	2.8	2.9	3.2	3.5	3.3	2.9
Driver Inexperience	7.7	1.7	0.8	0.7	0.4	0.4	0.2
Improper Passing/Overtaking	1.9	2.1	1.9	2.1	1.7	1.4	1.5
Physical Impairment	0.6	2.1	2.8	3.1	2.2	1.2	1.5
Improper Parking/Starting/Stopping	1.3	1.2	1.3	1.5	1.6	2.1	2.6
Unsafe Backing	1.2	1.0	1.4	1.4	1.8	1.6	1.6
Driving Left of Center--Not Passing	1.2	1.3	1.3	1.4	1.1	1.1	1.0
Improper or No Signal	0.5	0.4	0.4	0.5	0.8	0.7	0.4
Impeding Traffic	0.2	0.3	0.2	0.3	0.3	0.3	0.4
Failure to Use Lights	0.2	0.2	0.2	0.1	0.3	0.1	0.0
Other Human Factors	0.5	0.6	0.6	0.7	0.7	0.7	0.9
Vehicular Factors							
Skidding	3.0	3.3	3.5	3.7	3.3	1.6	1.2
Defective Equipment	1.0	1.0	0.9	1.0	0.8	0.2	0.4
Other Vehicular Factor	0.3	0.3	0.5	0.5	0.4	0.1	0.1
Miscellaneous Factors							
Weather	3.7	4.5	4.7	4.8	5.4	2.8	1.8
Other	1.3	1.4	2.0	1.9	2.1	1.4	1.0
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Contributing Factors Cited	15,464	13,472	10,504	9,061	24,657	6,049	2,020
Drivers for Whom There Was "No Clear Contributing Factor"	5,624	7,500	7,640	7,272	22,316	3,153	534
Total Number of Drivers	16,869	18,384	16,594	15,181	44,742	8,145	2,089

Percentages are based on all contributing factors cited within each age group. Zero, one, or two contributing factors may be associated with each driver. The percentages may not sum to 100 due to rounding. Contributing factors for bicyclists and pedestrians are excluded. Contributing factors with a frequency of less than one-tenth of one percent (for all age groups combined) are merged into the category "other human factors."

For contributing factors in single-vehicle crashes, see Table 1.09. For contributing factors in crashes at different levels of severity, see Table 1.20.

TABLE 1.11

PEOPLE KILLED OR INJURED IN VARIOUS VEHICLE TYPES, 1992

		Injured			
Vehicle Type	Killed	Severe	Moderate	Minor	Total
Automobile	370	2,720	9,877	18,323	30,920
Pickup Truck	94	509	1,717	2,418	4,644
Van	15	186	696	1,363	2,245
Motorhome/Camper	0	6	14	19	39
Taxicab	0	7	22	66	95
Police Vehicle	0	5	27	58	90
Fire Department Vehicle	0	1	4	5	10
School Bus	0	10	61	173	244
Other Bus	1	0	12	55	67
Ambulance	0	0	5	4	9
Military Vehicle	0	1	10	23	34
Snowmobile	4	11	15	8	34
All Terrain Vehicle	1	5	9	5	19
Farm Tractor or Equipment	3	5	12	6	23
Motorcycle*	28	323	673	292	1,288
Motorscooter/Motorbike*	0	10	23	8	41
Motorized Bicycle (Moped)*	0	9	26	9	44
Hit and Run Vehicle	0	11	51	71	133
Road Maintenance Vehicle	0	0	2	5	7
Single Truck (2-axle, 6-tire)	0	10	32	72	114
Single Truck (3 or more axles)	3	3	22	47	72
Single Truck with Trailer	0	4	14	23	41
Truck Tractor with No Trailer	0	1	3	10	14
Truck Tractor with Semi Trailer	2	13	66	101	180
Truck Tractor with Double Trailers	0	0	1	2	3
Other or Unknown Truck Type	0	0	2	2	4
Other or Unknown Motor Vehicle	3	23	59	80	162
Bicycle	11	177	599	473	1,249
Pedestrian	46	341	500	583	1,424
Total	581	4,391	14,554	24,304	43,249

* On the accident report form, police may show that a vehicle is a "motorcycle," a "motorscooter/motorbike," or a "moped or motorized bicycle." Since 1986, however, the law recognizes just two categories. If the vehicle has an engine capacity of more than 50 cc, it is classified as a motorcycle; if it has 50 cc or smaller engine capacity, it is classified as a motorized bicycle. The term moped is short for motorized pedalcycle, which is the same as motorized bicycle.

TABLE 1.12

DRIVER LICENSE* SUMMARY BY AGE, 1983 - 1992

Age	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
15	13,867	14,686	13,116	11,920	12,301	13,387	14,072	12,832	15,075	16,626
16	46,133	47,296	47,959	48,944	45,397	42,178	41,544	42,885	43,708	45,744
17	55,725	54,135	56,670	57,829	59,321	53,900	49,458	48,496	51,161	50,796
18	63,250	60,026	58,553	59,910	61,276	62,772	56,250	52,070	51,293	54,442
19	69,786	60,681	62,361	60,626	61,767	62,637	63,653	58,230	53,876	53,307
20	74,788	71,195	65,449	62,040	60,229	61,076	62,770	63,375	57,902	54,591
Under 21	323,549	308,019	304,108	301,269	300,291	295,950	287,747	277,888	273,015	275,506
15 - 19	248,761	236,824	238,659	239,229	240,062	234,874	224,977	214,513	215,113	220,915
20 - 24	388,573	376,051	370,613	352,170	336,289	326,738	319,048	316,504	312,463	307,139
25 - 29	381,076	384,544	405,120	402,984	399,409	396,744	386,440	372,178	357,464	345,255
30 - 34	343,874	350,728	370,634	374,138	380,972	385,508	393,168	398,645	402,273	404,717
35 - 39	281,484	295,902	322,827	329,018	335,262	344,613	355,869	364,385	371,856	383,109
40 - 44	224,477	231,740	241,313	257,213	269,275	280,236	298,889	316,265	324,986	335,328
45 - 49	182,122	185,534	195,594	202,083	213,358	221,666	229,993	234,494	252,944	266,872
50 - 54	168,949	168,248	170,984	171,833	174,453	179,129	184,310	189,266	197,122	210,453
55 - 59	169,520	167,629	169,847	168,037	165,791	164,032	163,520	164,023	165,779	169,769
60 - 64	154,937	157,311	161,519	161,268	161,733	161,449	160,260	159,799	158,552	157,248
65 - 69	133,450	133,503	139,155	141,584	143,841	144,830	147,857	148,161	148,934	149,867
70 - 74	101,548	103,525	112,352	115,619	118,338	120,753	121,638	122,965	126,115	128,653
75 - 79	67,908	69,288	77,369	80,947	85,032	86,901	89,355	92,378	96,235	98,605
80 - 84	35,191	35,359	42,850	46,817	50,812	51,922	52,667	55,000	58,863	60,829
85 & Older	15,272	14,619	20,482	23,305	27,326	27,634	27,179	29,915	34,455	35,198
Total	2,897,142	2,910,805	3,039,318	3,066,245	3,101,953	3,127,029	3,155,170	3,178,491	3,223,154	3,273,957

* Includes Learner's Permits

TABLE 1.13

MOTOR VEHICLE REGISTRATIONS, 1983 - 1992

Type of Vehicle*	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Passenger Cars	2,185,457	2,258,877	2,339,782	2,395,247	2,450,232	2,518,604	2,583,982	2,642,022	2,638,572	2,670,885
Pickups	469,116	490,087	500,744	501,646	509,070	515,968	526,212	528,342	520,339	525,205
Trucks	120,690	119,667	118,990	124,323	127,888	135,918	137,690	140,874	139,263	141,144
Recreational Vehicles	31,791	32,451	33,133	32,026	33,120	34,226	34,805	35,328	35,515	36,290
Motorcycles	155,502	153,851	151,449	141,261	134,590	128,956	123,308	120,081	117,492	116,124
Motorized Bicycles	14,516	13,633	13,034	12,047	12,311	10,529	9,987	9,306	8,703	7,947
School Buses	4,113	3,998	4,185	4,598	5,095	5,115	5,026	5,037	5,109	5,058
Buses	3,490	3,604	3,575	3,405	3,502	3,879	4,217	3,780	3,822	3,804
Van Pool	0	137	180	209	229	253	248	259	264	256
Tax Exempt Vehicles	49,811	51,525	53,510	35,741	37,659	35,969	38,106	37,739	39,727	38,829
Motor Vehicle Subtotal	3,034,486	3,127,830	3,218,582	3,250,503	3,313,696	3,389,417	3,463,581	3,522,768	3,508,806	3,545,542
Trailers	565,046	615,004	602,795	663,559	653,630	726,054	708,693	780,484	754,942	830,527
Collector's Vehicles	35,048	39,981	45,269	50,702	56,146	61,280	66,860	72,031	76,947	82,116
Total Registrations	3,634,580	3,782,815	3,866,646	3,964,764	4,023,472	4,176,751	4,239,134	4,375,283	4,340,695	4,458,185

* Minnesota license plates on a vehicle signify that it has been registered with the state and that the owner has paid the registration fee. The vehicle classification used for registration purposes is similar, but not identical, to the vehicle classification (shown in Tables 1.11 and 1.14) police use in reporting accidents. Following are some notes on the registration categories shown above:

Passenger cars include vans, except for "van pools." A van pool is a van used exclusively for car pooling purposes.

Pickup trucks are rated three-fourths ton or less.

Motorcycles have engines exceeding 50 cc; otherwise the vehicle is classified as a motorized bicycle.

Tax exempt vehicles are vehicles owned by city, county, or state offices. They have license plates but no registration fees are paid on them. (Police and fire department vehicles are tax exempt but are not included since they do not have state license plates and are not registered.)

Trailers (such as utility trailers pulled by cars, or semi or twin trailers pulled by trucks) are pulled by motorized vehicles and do not themselves have motors.

Collectors vehicles must be at least 20 years old and cannot be used for normal transportation purposes. They can only be driven, for example, to car shows.

TABLE 1.14

TYPES OF MOTOR VEHICLES IN 1992 CRASHES

Motor Vehicle Type*	Vehicles in Fatal Crashes	Injury Crashes	Property Damage Crashes	All Crashes
Automobile	458	38,083	85,450	123,991
Pickup Truck	155	6,938	17,318	24,411
Van	37	2,909	6,864	9,810
Motorhome/Camper	2	51	131	184
Taxicab	0	129	315	444
Police Vehicle	1	146	325	472
Fire Department Vehicle	0	13	36	49
School Bus	1	175	580	756
Other Bus	2	105	233	340
Ambulance	0	10	36	46
Military Vehicle	0	34	108	142
Snowmobile	4	34	30	68
All Terrain Vehicle	1	23	17	41
Farm Tractor or Equipment	3	67	119	189
Motorcycle*	29	1,158	211	1,398
Motorscooter/Motorbike*	0	39	4	43
Motorized Bicycle (Moped)*	0	41	5	46
Hit and Run Vehicle	10	1,188	6,238	7,436
Road Maintenance Vehicle	1	50	216	267
Single Truck (2-axle, 6-tire)	5	330	784	1,119
Single Truck (3 or more axles)	12	157	262	431
Single Truck with Trailer	2	97	303	402
Truck Tractor with No Trailer	1	37	76	114
Truck Tractor with Semi Trailer	47	605	1,612	2,264
Truck Tractor with Double Trailers	1	8	38	47
Other or Unknown Truck Type	0	31	224	255
Other or Unknown Motor Vehicle	7	313	841	1,161
Total**	779	52,771	122,376	175,926

* On the accident report form, police may show that a vehicle is a "motorcycle," a "motorscooter/motorbike," or a "moped or motorized bicycle." Since 1986, however, the law recognizes just two categories. If the vehicle has an engine capacity of more than 50 cc, it is classified as a motorcycle; if it has 50 cc or smaller engine capacity, it is classified as a motorized bicycle. The term moped is short for motorized pedalcycle, which is the same as motorized bicycle.

** Most crashes involve more than one vehicle, causing total vehicles to exceed total crashes. Bicyclists and pedestrians are excluded from this table.

TABLE 1.15

1992 CRASHES AND INJURIES BY FIRST HARMFUL EVENT

First Harmful Event	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured	Fatality Rate Per 1,000 Crashes
Collision With:							
Another Motor Vehicle	232	18,854	44,151	63,237	302	30,261	4.8
Parked Motor Vehicle	7	623	5,368	5,998	8	833	1.3
Railroad Train	7	39	65	111	9	54	81.1
Bicycle	8	1,157	86	1,251	8	1,204	6.4
Pedestrian	41	1,328	11	1,380	41	1,409	29.7
Deer	1	335	6,375	6,711	1	395	0.1
Other Animal	2	139	502	643	2	178	3.1
Fixed Object	96	3,360	6,872	10,328	103	4,390	10.0
Falling Object	3	71	194	268	3	97	11.2
Non-Collision:							
Overturn	87	2,623	2,311	5,021	92	3,683	18.3
Fire/Explosion	0	13	143	156	0	16	0.0
Submersion	3	18	41	62	3	25	48.4
Other or Unknown	7	557	1,078	1,642	9	704	5.5
Total	494	29,117	67,197	96,808	581	43,249	6.0

TABLE 1.16

1992 "HIT-AND-RUN" CRASHES AND INJURIES BY FIRST HARMFUL EVENT

First Harmful Event	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Collision With:						
Other Motor Vehicle	4	712	3,076	3,792	6	959
Parked Motor Vehicle	0	36	2,253	2,289	0	59
Railroad Train	0	0	2	2	0	0
Bicycle	1	126	15	142	1	130
Pedestrian	4	193	1	198	4	202
Deer	0	1	2	3	0	1
Other Animal	0	1	4	5	0	1
Fixed Object	0	62	651	713	0	72
Falling Object	1	4	5	10	1	8
Non-Collision:						
Overturn	0	14	41	55	0	20
Fire/Explosion	0	1	4	5	0	2
Submersion	0	1	2	3	0	1
Other or Unknown	0	17	115	132	0	19
Total	10	1,168	6,171	7,349	12	1,474

TABLE 1.17

1992 CRASHES BY TRAFFIC CONTROL DEVICE

Traffic Control Device	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Not Applicable	324	15,230	33,483	49,037	373	22,299
Traffic Signal	27	6,576	12,833	19,436	30	9,733
Overhead Flashers	3	190	636	829	4	285
Stop Sign-All Approaches	1	517	1,192	1,710	1	730
Other Stop Sign	87	4,255	7,879	12,221	104	6,832
Yield Sign	9	534	1,119	1,662	15	850
Flagman, Officer, or School Patrol	1	59	134	194	1	85
School Bus Stop Arm	0	18	38	56	0	29
School Zone Sign	0	7	19	26	0	8
No Passing Zone	22	402	503	927	28	664
RR Crossing Gate	0	14	52	66	0	16
RR Flashing Lights	2	24	29	55	3	40
RR Crossing Stop Sign	3	8	21	32	4	12
RR Other	2	34	70	106	2	49
Other	8	342	1,888	2,238	10	479
Unknown	5	907	7,301	8,213	6	1,138
Total	494	29,117	67,197	96,808	581	43,249

TABLE 1.18

1992 CRASHES BY WEATHER CONDITION

Weather Condition	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Clear	250	13,972	30,577	44,799	289	20,661
Cloudy	156	9,473	20,905	30,534	183	14,205
Rain	29	2,359	5,176	7,564	34	3,603
Snow	23	1,587	4,800	6,410	30	2,339
Sleet/Hail	13	638	1,856	2,507	16	933
Fog/Smog/Smoke	9	385	761	1,155	12	583
Blowing Sand/Dust	4	174	419	597	5	238
Severe Crosswinds	0	30	75	105	0	41
Other	2	34	175	211	2	52
Not Stated/Unknown	8	465	2,453	2,926	10	594
Total	494	29,117	67,197	96,808	581	43,249

TABLE 1.19

CONTRIBUTING FACTORS IN 1992 CRASHES

Contributing Factors	Crash Severity: Fatal Crashes	Crash Severity: Personal Injury Crashes	Crash Severity: Property Damage Crashes	Number of People Affected by the Factor: Killed	Number of People Affected by the Factor: Injured
Human Factors					
Driver Inattention/Distraction	11.7%	21.0%	20.6%	111	13,963
Failure to Yield Right of Way	11.8	15.8	15.7	126	11,259
Illegal/Unsafe Speed	14.3	11.5	10.8	139	8,128
Following Too Closely	0.9	6.5	7.0	8	4,187
Improper/Unsafe Lane Use	3.0	3.3	6.2	33	2,130
Physical Impairment	14.3	6.0	2.9	140	4,100
Disregard For Traffic Control Device	5.4	4.8	3.0	63	3,688
Driver Inexperience	2.9	3.7	3.0	26	2,462
Improper Turn	0.7	1.8	3.2	7	1,298
Vision Obscured	2.4	2.4	2.6	16	1,448
Pedestrian Violation/Error	4.1	4.3	0.0	29	1,199
Improper Passing/Overtaking	1.0	1.0	2.0	13	748
Unsafe Backing	0.0	0.4	2.4	0	257
Improper Parking/ Starting/Stopping	1.0	1.1	1.8	11	751
Driving Left of Roadway Center--Not Passing	7.0	1.6	1.2	89	1,292
Improper or No Signal	0.0	0.3	0.5	0	209
Impeding Traffic	0.1	0.2	0.2	1	167
Failure to Use Lights	0.3	0.3	0.2	3	194
Other Human Factors	1.3	1.3	1.0	12	780
Vehicular Factors					
Skidding	4.2	3.4	4.6	40	2,187
Defective Equipment	1.4	1.0	1.0	13	655
Other Vehicular Factor	0.5	0.5	0.7	4	339
Miscellaneous Factors					
Weather	4.7	4.4	6.1	32	2,371
Other	7.0	3.5	3.0	52	1,610
Total Percent	100.0%	100.0%	100.0%		
Total contributing factors cited	873	46,442	74,418		
Vehicles for Which There Was "No Clear Contributing Factor"	262	22,393	50,566		
Total Number of Vehicles	837	55,454	122,474		

Zero, one, or two contributing factors may be associated with each vehicle. This may cause the sum of the factors cited to differ from the number of vehicles and the sum of the people affected by the factors to exceed the number of people killed or injured during the year. Percentages are based on all factors cited; they may not sum to 100 due to rounding. Bicyclists and pedestrians are considered as vehicles in this table, and factors associated with them are included. For contributing factors by age of drivers, see tables 1.09 and 1.10. Contributing factors with a frequency of less than one-tenth of one percent are merged into the category "other human factors."

TABLE 1.20

1992 CRASHES BY LIGHT CONDITION

Light Condition	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Daylight	243	18,450	39,417	58,110	291	27,448
Dawn/Dusk	31	1,902	5,274	7,207	36	2,754
Dark/Street Lights On	53	4,903	11,287	16,243	62	7,252
Dark/No Street Lights	157	3,342	8,306	11,805	180	5,120
Other/Unknown	10	520	2,913	3,443	12	675
Total	494	29,117	67,197	96,808	581	43,249

TABLE 1.21

1992 CRASHES BY ROAD SURFACE CONDITION

Road Surface Condition	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Dry	358	19,434	39,790	59,582	411	29,051
Wet	65	5,072	10,774	15,911	80	7,710
Snow/Slush	20	1,342	3,853	5,215	23	1,978
Ice or Packed Snow	38	2,367	7,761	10,166	50	3,386
Other	9	391	764	1,164	12	525
Not Stated/Unknown	4	511	4,255	4,770	5	599
Total	494	29,117	67,197	96,808	581	43,249

TABLE 1.22

1992 CRASHES BY ROAD DESIGN

Road Design	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Freeway (Including Ramps)	35	2,469	6,275	8,779	39	3,566
Other Divided Highway	55	4,124	6,606	10,785	64	6,419
One-Way Street	3	866	1,390	2,259	3	1,261
4-6 Lanes Undivided	32	5,548	9,218	14,798	34	8,244
3 Lanes	3	269	462	734	4	426
2 Lanes--Two-Way	360	13,367	26,137	39,864	431	20,139
Alley/Driveway	0	191	531	722	0	221
Other	5	310	531	846	5	460
Not Stated/Unknown	1	1,973	16,047	18,021	1	2,513
Total	494	29,117	67,197	96,808	581	43,249

TABLE 1.23

1992 CRASHES BY TYPE OF ROADWAY

Type of Roadway	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Urban						
Interstate	18	1,572	4,437	6,027	22	2,248
Trunk Highway	48	5,671	11,906	17,625	52	8,460
County State Aid Highway	30	5,408	10,625	16,063	31	7,978
County Road	5	297	554	856	6	476
Local Street	36	6,834	18,738	25,608	39	9,518
Total	137	19,782	46,260	66,179	150	28,680
Rural						
Interstate	16	465	1,571	2,052	16	714
Trunk Highway	160	3,946	8,834	12,940	208	6,523
County State Aid Highway	127	2,887	5,483	8,497	150	4,348
County Road	17	528	803	1,348	19	829
Township Road	28	729	1,221	1,978	29	1,093
Local Street	4	573	2,290	2,867	4	778
Other Road	5	207	735	947	5	284
Total	357	9,335	20,937	30,629	431	14,569
All Roadways						
Interstate	34	2,037	6,008	8,079	38	2,962
Trunk Highway	208	9,617	20,740	30,565	260	14,983
County State Aid Highway	157	8,295	16,108	24,560	181	12,326
County Road	22	825	1,357	2,204	25	1,305
Township Road	28	729	1,221	1,978	29	1,093
Local Street	40	7,407	21,028	28,475	43	10,296
Other Road	5	207	735	947	5	284
Total	494	29,117	67,197	96,808	581	43,249

("Urban" refers to an area having a population of 5,000 or more; "rural" refers to an area of less than 5,000.)

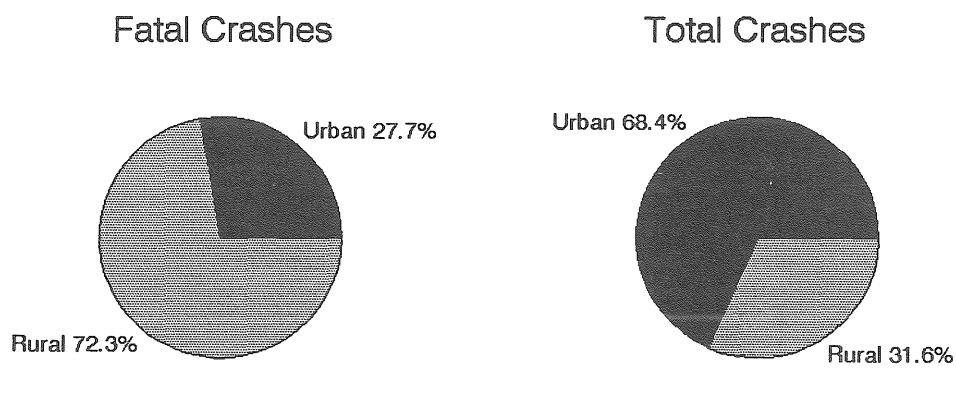
TABLE 1.24

1992 CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
100,000 & Over	34	6,382	15,497	21,913	38	8,988
50,000 - 99,999	9	1,853	4,384	6,246	11	2,620
25,000 - 49,999	29	5,276	11,382	16,687	33	7,745
10,000 - 24,999	35	4,011	9,779	13,825	36	5,959
5,000 - 9,999	30	2,260	5,218	7,508	32	3,368
2,500 - 4,999	19	835	2,207	3,061	21	1,246
1,000 - 2,499	13	588	1,534	2,135	17	880
Under 1,000	325	7,912	17,196	25,433	393	12,443
Total	494	29,117	67,197	96,808	581	43,249

FIGURE 1.03

Fatal vs Total Crashes, by Location, 1992



"Urban" refers to an area with a population of 5,000 or more. "Rural" refers to an area with a population of less than 5,000.

TABLE 1.25

1992 COUNTY CRASH REPORT

County	1992 CRASHES Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Average Crashes 1987-1991	Number Killed 1992	Average Killed 1987-1991	Number Injured 1992	Average Injured 1987-1991
Aitkin	8	79	178	265	*253*	9	*3*	114	*131*
Anoka	13	1,639	2,977	4,629	*4,942*	14	*23*	2,495	*2,563*
Becker	7	171	282	460	*444*	12	*6*	290	*262*
Beltrami	6	200	523	729	*666*	6	*4*	302	*323*
Benton	7	226	465	698	*700*	7	*7*	342	*329*
Big Stone	0	22	85	107	*99*	0	*2*	31	*50*
Blue Earth	4	446	1,144	1,594	*1,461*	4	*7*	635	*522*
Brown	2	118	315	435	*476*	3	*3*	180	*216*
Carlton	6	151	344	501	*526*	7	*7*	272	*237*
Carver	6	361	690	1,057	*999*	10	*10*	529	*482*
Cass	6	132	260	398	*382*	7	*9*	215	*217*
Chippewa	6	67	163	236	*189*	6	*4*	113	*115*
Chisago	4	197	486	687	*664*	4	*9*	338	*311*
Clay	5	272	724	1,001	*1,078*	5	*8*	407	*436*
Clearwater	2	36	75	113	*117*	2	*1*	59	*66*
Cook	3	41	137	181	*168*	3	*1*	63	*69*
Cottonwood	5	56	123	184	*183*	7	*2*	96	*99*
Crow Wing	8	348	714	1,070	*1,069*	8	*10*	552	*533*
Dakota	15	1,567	3,512	5,094	*5,016*	16	*21*	2,396	*2,184*
Dodge	6	59	165	230	*256*	8	*4*	102	*117*
Douglas	4	202	603	809	*794*	4	*8*	301	*348*
Faribault	3	63	135	201	*221*	5	*2*	106	*109*
Fillmore	2	107	245	354	*351*	3	*6*	179	*171*
Freeborn	3	201	522	726	*700*	4	*6*	326	*271*
Goodhue	8	326	814	1,148	*985*	9	*11*	503	*457*
Grant	1	25	63	89	*91*	1	*1*	41	*38*
Hennepin	50	8,114	18,514	26,678	*30,026*	55	*68*	11,577	*12,481*
Houston	6	92	258	356	*307*	6	*4*	133	*138*
Hubbard	1	97	158	256	*268*	1	*4*	155	*165*
Isanti	7	181	345	533	*515*	7	*5*	292	*259*

TABLE 1.25 CONTINUED

1992 COUNTY CRASH REPORT

County	1992 CRASHES Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Average Crashes 1987-1991	Number Killed 1992	Average Killed 1987-1991	Number Injured 1992	Average Injured 1987-1991
Itasca	5	197	458	660	*670*	7	*10*	291	*383*
Jackson	3	68	147	218	*204*	3	*2*	99	*94*
Kanabec	2	65	176	243	*235*	2	*2*	108	*150*
Kandiyohi	17	294	574	885	*785*	21	*8*	442	*419*
Kittson	0	19	55	74	*85*	0	*1*	24	*43*
Koochiching	3	97	178	278	*276*	5	*3*	158	*140*
Lac Qui Parle	3	38	68	109	*90*	3	*3*	62	*44*
Lake	2	54	170	226	*229*	2	*3*	85	*101*
Lake of The Woods	1	17	49	67	*64*	1	*1*	32	*29*
Le Sueur	8	119	322	449	*507*	8	*4*	193	*196*
Lincoln	3	27	86	116	*101*	3	*2*	54	*50*
Lyon	5	149	377	531	*354*	5	*3*	243	*184*
Mcleod	4	192	457	653	*693*	7	*7*	292	*331*
Mahnomen	1	36	41	78	*57*	1	*2*	56	*56*
Marshall	3	51	101	155	*136*	3	*2*	81	*78*
Martin	2	92	271	365	*389*	2	*2*	136	*197*
Meeker	4	102	235	341	*374*	4	*5*	135	*160*
Mille Lacs	4	144	250	398	*348*	7	*5*	253	*224*
Morrison	3	166	342	511	*493*	4	*8*	255	*270*
Mower	5	196	545	746	*695*	5	*4*	286	*270*
Murray	2	34	96	132	*108*	2	*2*	89	*62*
Nicollet	6	118	345	469	*508*	6	*5*	189	*196*
Nobles	3	94	270	367	*364*	3	*2*	136	*157*
Norman	2	31	63	96	*90*	3	*1*	38	*63*
Olmsted	10	762	1,759	2,531	*2,457*	12	*10*	1,105	*1,013*
Otter Tail	9	292	648	949	*847*	13	*10*	432	*450*
Pennington	2	92	172	266	*257*	3	*1*	125	*137*
Pine	6	150	292	448	*437*	8	*7*	243	*229*
Pipestone	1	54	93	148	*170*	1	*3*	75	*78*
Polk	7	148	353	508	*541*	8	*8*	206	*270*

TABLE 1.25 CONTINUED

1992 COUNTY CRASH REPORT

County	1992 CRASHES Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Average Crashes 1987-1991	Number Killed 1992	Average Killed 1987-1991	Number Injured 1992	Average Injured 1987-1991
Pope	3	33	93	129	*137*	3	*1*	52	*61*
Ramsey	18	3,876	9,895	13,789	*15,028*	20	*28*	5,502	*5,369*
Red Lake	0	13	52	65	*63*	0	*1*	22	*26*
Redwood	3	77	200	280	*213*	3	*2*	117	*121*
Renville	4	89	167	260	*231*	5	*8*	150	*135*
Rice	9	295	736	1,040	*1,061*	10	*9*	445	*483*
Rock	2	59	189	250	*208*	2	*1*	86	*80*
Roseau	4	50	163	217	*230*	5	*4*	79	*95*
St. Louis	20	1,047	2,361	3,428	*3,617*	24	*24*	1,561	*1,615*
Scott	14	422	903	1,339	*1,290*	18	*11*	681	*586*
Sherburne	9	239	535	783	*750*	12	*7*	385	*429*
Sibley	4	66	174	244	*235*	4	*3*	93	*102*
Stearns	20	911	1,975	2,906	*2,895*	29	*15*	1,385	*1,336*
Steele	1	187	552	740	*712*	1	*6*	277	*269*
Stevens	2	31	72	105	*150*	2	*2*	47	*58*
Swift	3	37	84	124	*121*	3	*1*	67	*60*
Todd	3	103	259	365	*386*	4	*7*	135	*225*
Traverse	1	17	29	47	*45*	2	*0*	29	*19*
Wabasha	4	110	257	371	*382*	5	*6*	165	*170*
Wadena	0	82	181	263	*265*	0	*1*	129	*130*
Waseca	1	87	229	317	*338*	1	*3*	116	*134*
Washington	11	795	1,948	2,754	*2,737*	11	*16*	1,164	*1,181*
Watonwan	4	54	134	192	*176*	6	*1*	82	*86*
Wilkin	2	47	103	152	*160*	2	*2*	82	*88*
Winona	6	323	772	1,101	*1,162*	6	*7*	451	*452*
Wright	15	434	789	1,238	*1,248*	17	*19*	670	*672*
Yellow Medicine	1	33	85	119	*128*	1	*2*	53	*69*
Unknown	0	106	248	354		0		157	
Total	494	29,117	67,197	96,808	*100,568*	581	*570*	43,249	*43,858*

TABLE 1.26

1992 CRASHES IN CITIES OF 2,500 OR MORE POPULATION

City	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Afton	2	17	51	70	2	24
Albert Lea	1	118	251	370	1	182
Alexandria	1	85	257	343	1	130
Andover	1	75	138	214	1	120
Anoka	0	138	291	429	0	193
Apple Valley	3	158	286	447	4	249
Arden Hills	1	91	205	297	1	144
Aurora	0	6	26	32	0	10
Austin	2	114	365	481	2	142
Baxter	0	47	54	101	0	71
Bayport	0	5	14	19	0	6
Belle Plaine	0	12	48	60	0	17
Bemidji	3	88	304	395	3	132
Benson	2	13	34	49	2	15
Big Lake	0	16	35	51	0	32
Blaine	2	337	559	898	2	543
Bloomington	3	662	1,634	2,299	3	940
Blue Earth	0	10	35	45	0	18
Brainerd	0	114	342	456	0	163
Breckenridge	0	16	51	67	0	29
Brooklyn Center	1	212	443	656	1	311
Brooklyn Park	3	426	542	971	4	650
Buffalo	0	56	88	144	0	90
Burnsville	3	326	693	1,022	3	490
Caledonia	0	9	29	38	0	12
Cambridge	0	46	96	142	0	69
Cannon Falls	0	10	47	57	0	14
Champlin	0	64	133	197	0	94
Chanhassen	1	104	209	314	1	149
Chaska	2	78	138	218	2	111
Chisholm	0	13	65	78	0	16
Circle Pines	0	14	35	49	0	28
Cloquet	4	82	166	252	4	174
Columbia Heights	1	85	176	262	1	118
Coon Rapids	1	399	674	1,074	1	592
Corcoran	0	15	39	54	0	24
Cottage Grove	0	93	237	330	0	136
Crookston	1	33	86	120	1	40
Crystal	2	106	146	254	2	169
Dayton	1	19	35	55	1	24
Deephaven	0	8	10	18	0	15
Delano	0	12	43	55	0	20
Detroit Lakes	0	57	111	168	0	98
Dilworth	0	8	18	26	0	13
Duluth	3	446	1,037	1,486	5	638
Eagan	1	227	581	809	1	343
East Bethel	2	47	75	124	2	80

TABLE 1.26 CONTINUED

1992 CRASHES IN CITIES OF 2,500 OR MORE POPULATION

City	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
East Grand Forks	0	34	135	169	0	48
Eden Prairie	0	230	615	845	0	321
Edina	1	265	556	822	1	377
Elk River	1	64	162	227	1	93
Ely	1	14	43	58	1	24
Eveleth	0	12	46	58	0	22
Excelsior	0	16	31	47	0	22
Fairmont	0	58	174	232	0	85
Falcon Heights	0	33	67	100	0	42
Faribault	0	118	302	420	0	183
Farmington	0	28	70	98	0	39
Fergus Falls	0	85	211	296	0	122
Forest Lake	2	31	96	129	2	41
Fridley	3	209	347	559	3	313
Gilbert	0	7	17	24	0	12
Glencoe	0	15	45	60	0	22
Glenwood	0	8	33	41	0	12
Golden Valley	0	179	436	615	0	252
Goodview	0	6	19	25	0	8
Grand Rapids	0	50	187	237	0	79
Granite Falls	0	11	32	43	0	20
Ham Lake	0	60	93	153	0	87
Hastings	0	83	194	277	0	115
Hermantown	1	41	70	112	2	66
Hibbing	1	113	239	353	1	165
Hopkins	0	112	216	328	0	141
Hoyt Lakes	0	4	26	30	0	7
Hugo	0	19	37	56	0	30
Hutchinson	0	66	172	238	0	92
Independence	1	20	54	75	1	25
International Falls	0	58	120	178	0	93
Inver Grove Heights	0	117	270	387	0	180
Jackson	1	20	46	67	1	28
Jordan	0	14	30	44	0	17
Kasson	0	9	28	37	0	11
La Crescent	1	15	65	81	1	25
Lake City	1	18	65	84	2	22
Lake Elmo	1	51	101	153	1	81
Lakeville	2	151	329	482	2	266
Lauderdale	0	13	39	52	0	15
Le Sueur	1	9	32	42	1	12
Lino Lakes	0	48	150	198	0	65
Litchfield	0	22	73	95	0	25
Little Canada	0	88	218	306	0	115
Little Falls	0	40	115	155	0	51
Long Prairie	0	12	29	41	0	13
Luverne	0	23	77	100	0	32

TABLE 1.26 CONTINUED

1992 CRASHES IN CITIES OF 2,500 OR MORE POPULATION

City	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Mahtomedi	0	10	29	39	0	15
Mankato	1	301	781	1,083	1	407
Maple Grove	1	122	359	482	1	166
Maplewood	2	305	710	1,017	3	470
Marshall	1	70	193	264	1	106
Medina	1	31	90	122	1	50
Melrose	0	7	20	27	0	8
Mendota Heights	0	61	151	212	0	105
Minneapolis	23	3,982	9,207	13,212	26	5,642
Minnetonka	1	252	625	878	1	381
Minnetrista	1	25	79	105	1	36
Montevideo	0	32	98	130	0	50
Monticello	0	40	104	144	0	53
Moorhead	2	171	532	705	2	239
Mora	0	7	42	49	0	9
Morris	0	17	41	58	0	23
Mound	1	23	62	86	1	29
Mounds View	2	46	107	155	2	65
Mountain Iron	0	22	31	53	0	37
New Brighton	0	79	227	306	0	114
New Hope	0	81	126	207	0	111
Newport	1	60	143	204	1	76
New Prague	1	5	27	33	1	9
New Ulm	0	61	178	239	0	97
Northfield	0	45	98	143	0	65
North Mankato	3	28	85	116	3	50
North Oaks	0	4	30	34	0	7
North St. Paul	0	59	146	205	0	93
Oakdale	1	64	193	258	1	105
Oak Park Heights	0	30	57	87	0	41
Olivia	0	5	23	28	0	8
Orono	4	48	103	155	4	67
Ortonville	0	6	24	30	0	7
Osseo	1	22	64	87	1	30
Owatonna	0	87	301	388	0	119
Park Rapids	0	16	37	53	0	24
Pine City	0	17	33	50	0	20
Pipestone	0	16	35	51	0	18
Plainview	0	2	19	21	0	4
Plymouth	1	213	508	722	1	310
Princeton	0	27	47	74	0	39
Prior Lake	3	78	86	167	3	137
Proctor	0	13	36	49	0	18
Ramsey	2	62	124	188	3	115
Red Wing	3	122	341	466	3	185
Redwood Falls	0	17	96	113	0	26
Richfield	0	347	863	1,210	0	508

TABLE 1.26 CONTINUED

1992 CRASHES IN CITIES OF 2,500 OR MORE POPULATION

City	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Robbinsdale	1	87	188	276	1	128
Rochester	1	486	1,260	1,747	1	639
Rockford	1	11	20	32	1	19
Rosemount	1	68	139	208	1	104
Roseville	1	309	709	1,019	1	435
St. Anthony	0	29	56	85	0	40
St. Cloud	3	542	1,227	1,772	3	817
St. James	1	20	36	57	1	30
St. Joseph	0	13	20	33	0	15
St. Louis Park	1	290	694	985	2	377
St. Michael	0	4	15	19	0	5
St. Paul	11	2,456	6,544	9,011	12	3,413
St. Paul Park	0	18	30	48	0	25
St. Peter	1	20	81	102	1	27
Sartell	0	19	29	48	0	26
Sauk Centre	0	18	59	77	0	23
Sauk Rapids	1	39	111	151	1	65
Savage	1	69	176	246	1	108
Shakopee	2	124	285	411	2	188
Shoreview	1	106	274	381	1	153
Shorewood	0	41	90	131	0	73
Silver Bay	0	2	14	16	0	4
Sleepy Eye	0	16	53	69	0	24
South Interntl. Falls	0	0	0	0	0	0
South St. Paul	0	111	237	348	0	137
Spring Lake Park	0	51	90	141	0	71
Spring Valley	0	9	22	31	0	14
Staples	0	4	54	58	0	4
Stewartville	0	12	26	38	0	16
Stillwater	0	61	201	262	0	92
Thief River Falls	1	62	125	188	1	83
Two Harbors	0	14	42	56	0	23
Vadnais Heights	0	73	230	303	0	99
Virginia	0	59	176	235	0	81
Waconia	1	17	51	69	1	34
Wadena	0	25	83	108	0	40
Waite Park	0	51	154	205	0	77
Waseca	0	40	91	131	0	52
Wayzata	0	42	125	167	0	54
Wells	0	5	18	23	0	5
West St. Paul	1	112	272	385	1	169
White Bear Lake	0	199	364	563	0	311
Willmar	1	166	381	548	1	244
Windom	2	27	54	83	3	42
Winona	0	170	472	642	0	229
Woodbury	0	102	234	336	0	161
Worthington	2	46	168	216	2	71

TABLE 1.27

1992 CRASHES BY TIME AND DAY

Hour Beginning	Total Crashes	Fatal Crashes	Sunday All	Sunday Fatal	Monday All	Monday Fatal	Tuesday All	Tuesday Fatal	Wednesday All	Wednesday Fatal	Thursday All	Thursday Fatal	Friday All	Friday Fatal	Saturday All	Saturday Fatal
Midnight	1,761	32	404	5	152	2	118	2	186	4	198	3	237	7	466	9
1:00	2,523	28	642	11	197	1	192	0	227	1	257	3	336	4	672	8
2:00	1,272	19	332	4	97	0	110	1	113	3	138	3	139	3	343	5
3:00	817	9	208	1	68	0	70	3	107	1	74	0	93	4	197	0
4:00	713	5	172	2	63	0	78	1	70	0	76	0	89	1	165	1
5:00	1,086	10	146	2	162	0	181	2	160	2	120	0	167	1	150	3
6:00	2,205	15	146	4	453	3	382	1	374	1	340	1	350	4	160	1
7:00	4,690	16	147	1	933	2	854	1	969	2	778	4	770	3	239	3
8:00	4,199	10	205	3	740	1	714	3	761	0	715	0	687	1	377	2
9:00	3,485	17	260	3	503	1	547	1	551	1	509	9	567	2	548	0
10:00	3,943	19	391	2	536	1	513	5	596	2	583	3	621	2	703	4
11:00	4,575	19	473	3	612	3	606	4	676	3	642	3	800	3	766	0
Noon	5,573	25	647	2	776	3	740	3	798	5	807	6	934	4	871	2
1:00	4,908	24	525	5	669	3	642	3	748	3	681	1	884	7	759	2
2:00	5,929	20	539	3	837	1	875	0	910	4	917	3	1,115	5	736	4
3:00	7,332	31	582	4	1,029	8	1,105	4	1,207	3	1,237	4	1,420	7	752	1
4:00	7,728	29	638	8	1,098	5	1,175	7	1,249	4	1,339	2	1,482	0	747	3
5:00	7,900	21	653	1	1,154	3	1,217	0	1,316	7	1,421	2	1,354	4	785	4
6:00	5,670	26	675	3	768	0	798	4	848	6	870	4	953	4	758	5
7:00	4,293	30	556	3	520	3	566	4	606	2	652	5	769	5	624	8
8:00	3,461	17	471	1	455	1	459	0	509	5	487	2	544	3	536	5
9:00	3,773	19	496	2	404	2	495	2	510	3	613	2	685	5	570	3
10:00	3,326	27	417	3	321	3	425	3	426	2	475	3	650	4	612	9
11:00	2,579	23	283	0	216	2	323	3	300	3	351	4	592	5	514	6
Unknown	3,067	3	369	0	406	1	382	0	458	0	439	1	543	1	470	0
Total	96,808	494	10,377	76	13,169	49	13,567	57	14,675	67	14,719	68	16,781	89	13,520	88

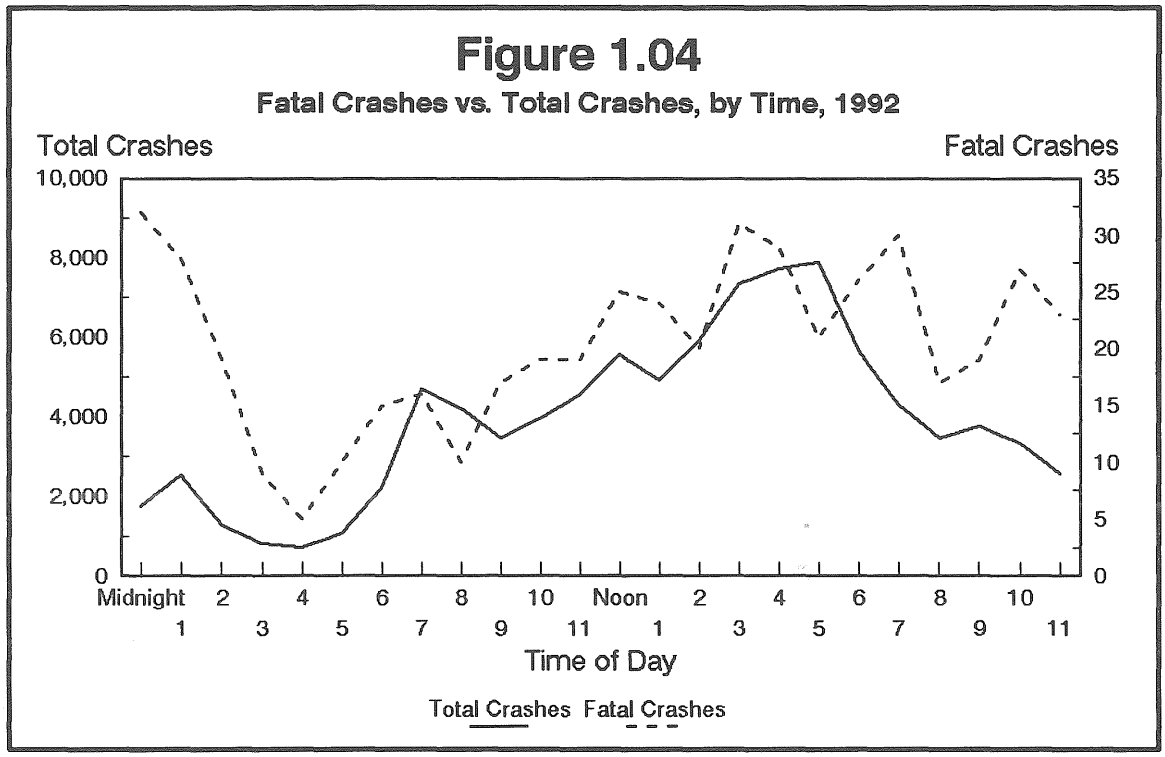


TABLE 1.28

1992 CRASHES, FATALITIES, AND INJURIES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
January	24	2,077	6,377	8,478	27	3,105
February	26	1,811	4,813	6,650	29	2,646
March	31	1,914	4,953	6,898	40	2,835
April	25	2,026	4,417	6,468	31	3,060
May	42	2,473	4,801	7,316	49	3,583
June	39	2,708	5,039	7,786	47	4,047
July	61	2,707	5,013	7,781	71	4,086
August	45	2,702	4,961	7,708	51	4,162
September	48	2,597	5,048	7,693	56	3,810
October	48	2,816	6,302	9,166	56	4,131
November	56	2,292	6,528	8,876	66	3,390
December	49	2,994	8,945	11,988	58	4,394
Total	494	29,117	67,197	96,808	581	43,249

TABLE 1.29

HOLIDAY CRASH SUMMARY, 1988 - 1992

Holiday Period	Year	Hours*	Total Crashes	Fatal Crashes	Personal Injury Crashes	Killed	Injured
Memorial Day	1988	78	691	8	243	8	369
(For 1992, the holiday	1989	78	749	7	288	7	426
period was 6 PM Fri.,	1990	78	861	4	310	4	497
May 22 - midnight	1991	78	739	4	230	4	333
Mon., May 25)	1992	78	682	7	232	7	388
July 4th	1988	78	717	8	282	8	458
(For 1992, the holiday	1989	102	1,079	13	439	14	708
period was 6 PM Thur.,	1990	30	351	2	142	2	216
July 2 - midnight	1991	102	988	13	392	15	644
Sun., July 5)	1992	78	702	7	248	9	422
Labor Day	1988	78	764	9	271	12	416
(For 1992, the holiday	1989	78	801	4	289	4	413
period was 6 PM Fri.,	1990	78	713	8	307	10	486
Sep. 4 - midnight	1991	78	655	8	236	12	403
Mon., Sep. 7)	1992	78	723	6	250	7	413
Thanksgiving	1988	102	1,580	8	386	8	595
(For 1992, the holiday	1989	102	1,180	6	313	6	482
period was 6 PM Wed.,	1990	102	845	8	237	11	377
Nov. 25 - midnight	1991	102	1,444	5	305	10	452
Sun., Nov. 29)	1992	102	1,066	6	295	7	444
Christmas	1988	78	1,052	1	247	1	406
(For 1992, the holiday	1989	78	1,247	7	347	8	518
period was 6 PM Wed.,	1990	102	1,907	2	443	3	662
Dec. 23 - midnight	1991	54	414	2	114	2	164
Sun., Dec. 27)	1992	102	1,117	4	285	7	425
New Year's							
(For 1992/93, the	1988/89	78	823	4	219	4	335
holiday period was	1989/90	78	972	5	248	5	398
6 PM Wed., Dec. 30,	1990/91	102	1,457	4	386	4	564
1991 - midnight Sun.,	1991/92	54	453	2	126	2	213
Jan. 3, 1993)	1992/93	102	1,662	5	432	6	657

* Holiday period hours vary depending on the day of the week on which the holiday falls.

II: ALCOHOL - RELATED CRASHES

The 1980s saw a decrease in the percentage of drivers killed who tested positive for alcohol. This percentage declined until the mid-80s, then reached a plateau at around 50%. In Minnesota it is illegal to drive with an alcohol concentration of .10 or higher. Minnesota law requires alcohol testing of any driver or pedestrian, 16 years of age or older, who dies within 4 hours as a result of a traffic crash.

In September of 1986, the drinking age was raised from 19 to 21, but the law was phased in. The last year anyone under the age of 21 could legally drink was 1988; everyone had to be 21 in 1992.

"Alcohol-related" defined
In the case of fatal crashes and fatalities, both the investigating officer's perception of alcohol involvement as well as the alcohol test results for any driver, pedestrian, or bicyclist involved in the crash are used. In the case of injury crashes, injuries, and property damage crashes, only the officer's perception of alcohol involvement is used. Thus, the number of alcohol-related injury crashes, injuries, and property damage crashes are probably underestimated.

18% of revocations for test refusal
Of the 36,511 alcohol-related driver license revocations processed, about 18% were for refusing an alcohol test. This has held constant at around 20% since 1986.

20 - 24 most involved age group
There were 220 fatalities and 5,837 injuries that were alcohol-related in 1992. Of these, 25% of those killed and 22% of those injured were between the ages of 20 and 24. More than half (53%) of persons killed and persons injured were between the ages of 15 and 29. At least 38% of the fatalities, 15% of the injuries, and 5% of the property damage crashes were alcohol-related in 1992.

Majority of alcohol-related fatalities had themselves been drinking
Of the 220 alcohol-related fatalities, 50% were drivers or pedestrians who tested positive for alcohol. Another 10% were passengers who tested positive for alcohol. Thirty percent were not tested for alcohol. The other 10% showed no alcohol but are alcohol-related because some driver in the crash had been drinking.

Alcohol-related fatal crashes differ
Alcohol-related fatal crashes are more likely to be collisions with fixed objects or overturns than fatal crashes in general. In 1992, 35% of alcohol-related fatal crashes were collisions with another motor vehicle, 28% were collisions with fixed objects, and 25% were overturns.

Test results of drivers killed
Of the 344 drivers who were killed in motor vehicle crashes, 237 (69%) were tested for alcohol concentrations. Of these, 57% showed no alcohol, 5% had test results from .01 to .09, and 38% tested at .10 or above. Of those testing at .10 or above, 87% were male, 40% died from a crash that occurred between midnight and 3:00 AM, and 13% were under 21 years old.

Under 21 similar to those over 21
Of the 52 drivers under the age of 21 who died in crashes, 30 were tested for alcohol concentration. Of these, 40% were at or over .10, and 3% were between .01 and .09. For all drivers killed, 38% were at or above .10 and 5% were between .01 and .09. The 30 to 34 year old age group had the highest percentage of drivers who tested at or above .10.

Late night crashes
Alcohol-related crashes follow a "U" shaped curve by time of day. The hour with the most crashes is from 1:00 to 2:00 AM. Crashes are high from midnight to 3:00 AM, then drop down to be low during the day and start to climb a little during evening rush hour and build up to midnight again.

Saturday and Sunday mornings most crash involved
The early morning hours on Saturday and Sunday are the most alcohol involved. It should be remembered that these hours are considered by some to be late Friday and Saturday night. Consequently, Saturday and Sunday are the two highest days of the week for alcohol-related crashes.

TABLE 2.01

DRINKING DRIVER SUMMARY, 1983 - 1992

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Drunken Driving Arrests	32,155	36,638	35,383	36,390	34,664	32,827	34,562	37,261	33,574	N/A[3]
% Male	86%	86%	85%	85%	84%	84%	84%	83%	84%	N/A[3]
% Female	14%	14%	15%	15%	16%	16%	16%	17%	16%	N/A[3]
Alcohol-Related Driver License Revocations Processed[1]	41,311	43,502	40,807	42,586	40,899	37,530	38,619	42,470	37,679	36,511
Administrative Revocations For Refusing Test	11,155	11,413	9,219	8,468	8,336	7,907	7,943	8,354	7,452	6,742
(These are included in the total number of Revocation Processed above.)										
Drivers Killed	345	383	372	347	297	361	368	334	327	344
Tested	75%	83%	79%	81%	89%	87%	85%	78%	74%	69%
Alcohol Concentration										
(.00)	44%	42%	53%	51%	50%	52%	50%	50%	56%	57%
(.01 - .09)	11%	11%	11%	9%	7%	10%	8%	9%	9%	5%
(.10 or higher)	45%	47%	37%	41%	43%	38%	41%	42%	35%	38%
Alcohol-Related Fatalities[2]		305	261	264	224	277	275	235	212	220
% of Total Fatalities		52%	43%	46%	42%	45%	45%	41%	40%	38%

[1] Total alcohol revocations are higher than the number of DWI arrests because they include certain multiple offenders who are revoked twice, under separate statutes, and those who have their Minnesota driver's license revoked because of an arrest outside of Minnesota.

[2] Alcohol-related fatalities were defined differently prior to 1984.

[3] DWI Arrest data for 1992 were not available in time for publication.

TABLE 2.02

DWI ARRESTS BY AGE, 1982 - 1991

The DWI arrest data for 1992 were not available in time for publication.

Age	1982	1983	1984	1985	1986	1987	1988	1989	1990*	1991
14 & Younger	4	7	6	8	8	8	6	8	7	5
15	13	21	21	24	27	13	15	25	12	14
16	202	169	185	171	254	208	160	175	158	126
17	503	546	500	446	546	485	503	458	431	299
18	1,327	1,284	1,342	1,109	1,151	1,084	1,038	1,072	959	740
19	1,789	1,983	2,166	1,864	1,813	1,363	1,229	1,284	1,318	1,063
20	1,840	2,040	2,370	2,035	2,002	1,709	1,291	1,426	1,472	1,315
Total Under 21	5,678	6,050	6,590	5,657	5,801	4,870	4,242	4,448	4,357	3,562
14 & Younger	4	7	6	8	8	8	6	8	7	5
15 - 19	3,834	4,003	4,214	3,614	3,791	3,153	2,945	3,014	2,878	2,242
20 - 24	8,213	9,564	11,220	10,289	10,273	9,345	7,933	8,071	8,357	7,470
25 - 29	5,229	6,299	7,511	7,618	8,295	8,146	7,920	8,293	8,744	7,332
30 - 34	3,450	3,948	4,720	4,933	5,002	5,110	5,146	5,554	6,509	6,312
35 - 39	2,273	2,701	3,013	3,200	3,316	3,356	3,265	3,577	4,111	4,100
40 - 44	1,589	1,796	2,078	2,062	2,098	2,087	2,101	2,418	2,689	2,680
45 - 49	1,119	1,239	1,394	1,292	1,274	1,289	1,360	1,407	1,531	1,340
50 - 54	849	975	916	911	857	834	786	892	985	845
55 - 59	688	738	704	686	631	584	556	568	590	489
60 - 64	412	471	443	395	397	359	406	389	417	369
65 & Older	388	414	419	375	448	393	403	371	441	390
Total	28,048	32,155	36,638	35,383	36,390	34,664	32,827	34,562	37,261	33,574

* The total for 1990 includes 2 arrests where age was unknown.

"ALCOHOL - RELATED"

The term "alcohol-related" is defined differently for fatal crashes and fatalities than it is for injury crashes, injuries, and property damage crashes.

Alcohol-related fatality: The investigating officer suspected alcohol involvement and/or there was a positive blood test for alcohol for any driver, pedestrian or bicyclist involved in the crash.

Alcohol-related fatal crash: The investigating officer suspected alcohol involvement and/or there was a positive blood test for alcohol for any driver, pedestrian or bicyclist involved in the crash.

Alcohol-related injury crash/injury: The investigating officer suspected alcohol involvement for any driver, pedestrian or bicyclist involved in the crash. Since only the officer's perception is used in this definition, alcohol-related injury crashes and injuries are probably underestimated.

Alcohol-related property damage crash: The investigating officer suspected alcohol involvement for any driver, pedestrian or bicyclist involved in the crash. Since only the officer's perception is used in this definition, alcohol-related property damage crashes are probably underestimated.

TABLE 2.03

AGE OF PERSONS KILLED AND INJURED IN 1992 ALCOHOL - RELATED CRASHES

Age	Killed[1]	Injured[2]
0 - 4	1	52
5 - 9	1	86
10 - 14	2	125
15 - 19	25	855
20 - 24	56	1,311
25 - 29	35	923
30 - 34	36	760
35 - 39	13	508
40 - 44	14	331
45 - 49	8	189
50 - 54	6	130
55 - 59	6	98
60 - 64	2	81
65 - 69	4	59
70 - 74	4	48
75 - 79	1	27
80 - 84	5	11
85 & Older	0	6
Not Stated	1	237
Total	220*	5,837

1 Includes alcohol test information as well as officer's perception of alcohol noted on accident report.
2 Includes only police officer's perception of alcohol noted on accident report.

* Seven of the 220 alcohol-related fatalities were pedestrians who had been drinking. In 2 of these 7 cases, the motor vehicle driver had also been drinking.

TABLE 2.04

1992 ALCOHOL - RELATED FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY TRAFFIC ROLE

Traffic Role	Killed	Tested	Alcohol Concentration (.00)	(.01 - .09)	(.10 or more)
Car or Truck Driver	117	98	10	13	75
Car or Truck Passenger	62	28	7	7	14
Motorcycle Driver	13	12	1	0	11
Motorcycle Passenger	4	1	0	0	1
Snowmobile Driver	4	2	0	0	2
Pedestrian	13	9	2	1	6
Other Driver	2	2	1	0	1
Other/Unknown	5	2	0	0	2
Total	220	154	21	21	112

TABLE 2.05

PERCENT OF DEATHS, INJURIES, AND PROPERTY DAMAGE CRASHES DETERMINED TO BE ALCOHOL - RELATED, 1984 - 1992

	1984	1985	1986	1987	1988	1989	1990	1991	1992
Deaths*	52%	43%	46%	42%	45%	45%	41%	40%	38%
Injuries**	19%	16%	17%	17%	15%	15%	15%	13%	13%
Property Damage Crashes**	7%	6%	7%	7%	5%	5%	6%	5%	5%

* Includes alcohol test information as well as officer's perception of alcohol noted on accident report.
**Includes only police officer's perception of alcohol noted on accident report.

TABLE 2.06

ALCOHOL - RELATED* FATAL CRASHES BY FIRST HARMFUL EVENT, 1992

First Harmful Event	Alcohol-Related Fatal Crashes Number	Percent	All Fatal Crashes Number	Percent
Collision with:				
Another Motor Vehicle	66	35.3%	232	47.0%
Parked Motor Vehicle	0	0.0	7	1.4
Railroad Train	1	0.5	7	1.4
Bicycle	0	0.0	8	1.6
Pedestrian	12	6.4	41	8.3
Deer	0	0.0	1	0.2
Other Animal	1	0.5	2	0.4
Fixed Object	53	28.3	96	19.4
Falling Object	2	1.1	3	0.6
Non-Collision:				
Overturn	46	24.6	87	17.6
Submersion	2	1.1	3	0.6
Other	4	2.1	7	1.4
Total	187	100.0%	494	100.0%

* Includes alcohol test information as well as officer's perception of alcohol noted on accident report.

TABLE 2.07

TEST RESULTS OF DRIVERS KILLED, 1983 - 1992

Year	Killed	Tested	Alcohol Concentration* (.00)	(.01 - .09)	(.10 or more)
1983	345	258	113 (44%)	28 (11%)	117 (45%)
1984	383	318	133 (42%)	36 (11%)	149 (47%)
1985	372	295	156 (53%)	31 (11%)	108 (37%)
1986	347	281	143 (51%)	24 (9%)	114 (41%)
1987	297	265	132 (50%)	18 (7%)	115 (43%)
1988	361	313	163 (52%)	32 (10%)	118 (38%)
1989	368	313	158 (50%)	26 (8%)	129 (41%)
1990	334	260	129 (50%)	23 (9%)	108 (42%)
1991	327	242	135 (56%)	22 (9%)	85 (35%)
1992	344	237	135 (57%)	13 (5%)	89 (38%)

* Percentages are based on number of motor vehicle drivers tested.

TABLE 2.08

DRIVERS KILLED WHO TESTED .01 OR HIGHER, 1983 - 1992 ("Any Alcohol")

Year	Total	Male	Female	Occurred Between Midnight - 3 AM	Under Legal Age
1983	145	129 (89%)	16 (11%)	38 (26%)	13 (9%)
1984	185	163 (88%)	22 (12%)	63 (34%)	17 (9%)
1985	139	116 (83%)	23 (17%)	60 (43%)	14 (10%)
1986	138	117 (85%)	21 (15%)	50 (36%)	16 (12%)*
1987	133	112 (84%)	21 (16%)	34 (26%)	22 (17%)
1988	150	131 (87%)	19 (13%)	32 (21%)	34 (23%)
1989	155	138 (89%)	17 (11%)	47 (30%)	26 (17%)
1990	131	110 (84%)	21 (16%)	48 (37%)	28 (21%)
1991	107	98 (92%)	9 (8%)	37 (35%)	23 (21%)
1992	102	82 (80%)	20 (20%)	39 (38%)	13 (13%)

* On September 1, 1986, the drinking age was raised from 19 to 21.

TABLE 2.09

DRIVERS KILLED WHO TESTED .10 OR HIGHER, 1983 - 1992 ("Over Limit")

Year	Total	Male	Female	Occurred Between Midnight - 3 AM	Under Legal Age
1983	117	105 (90%)	12 (10%)	38 (32%)	8 (7%)
1984	149	132 (89%)	17 (11%)	50 (34%)	12 (8%)
1985	108	90 (83%)	18 (17%)	49 (45%)	6 (6%)
1986	114	100 (88%)	14 (12%)	42 (37%)	12 (11%)*
1987	115	98 (85%)	17 (15%)	33 (29%)	13 (11%)
1988	118	100 (85%)	18 (15%)	27 (23%)	22 (19%)
1989	129	117 (91%)	12 (9%)	42 (33%)	19 (15%)
1990	108	92 (85%)	16 (15%)	42 (39%)	22 (20%)
1991	85	79 (93%)	6 (7%)	30 (35%)	13 (15%)
1992	89	77 (87%)	12 (13%)	36 (40%)	12 (13%)

* On September 1, 1986, the drinking age was raised from 19 to 21.

FIGURE 2.01

Drivers Killed Who Had Been Drinking 1983 - 1992

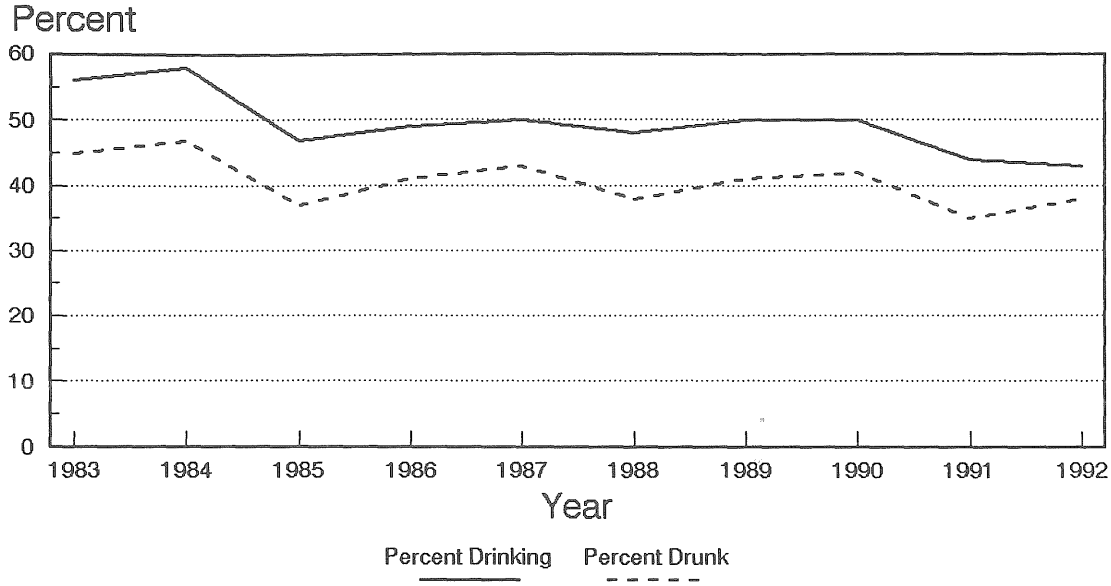


FIGURE 2.02

Percent of Drivers Killed Who Had Been Drinking, by Age, 1992

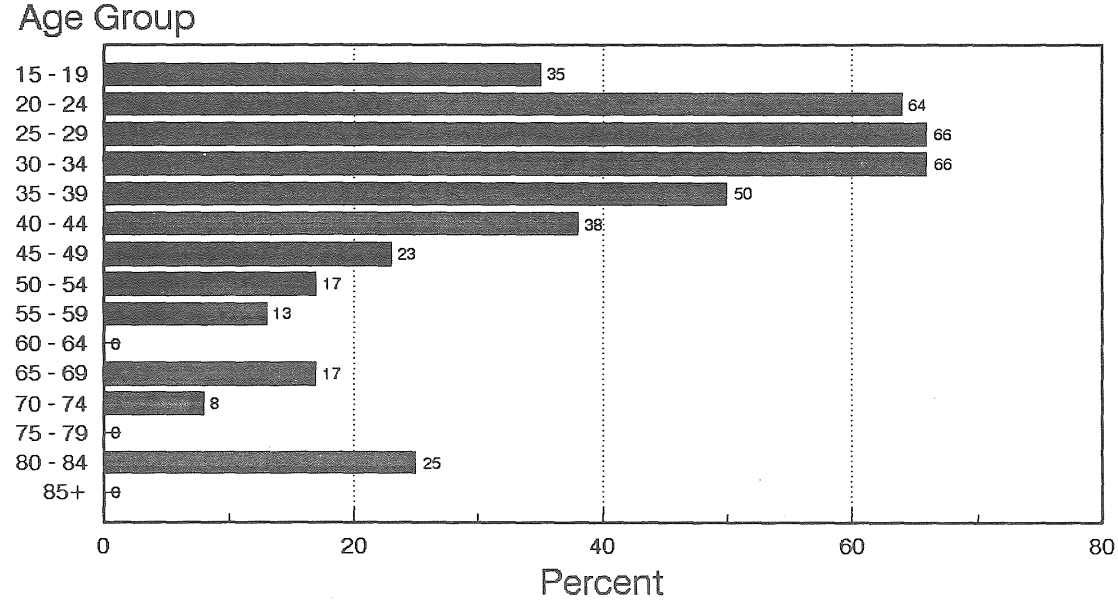


TABLE 2.10

1992 DRIVER FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY AGE

Age	Killed	Tested	Alcohol Concentration* (.00)	Alcohol Concentration* (.01 - .09)	Alcohol Concentration* (.10 or more)	Alcohol Concentration .00	.01-.04	.05-.09	.10-.14	.15-.19	.20-.24	.25 & Over
14 & Younger	1	0	0	0	0	0	0	0	0	0	0	0
15	2	2	2	0	0	2	0	0	0	0	0	0
16	4	2	2	0	0	2	0	0	0	0	0	0
17	15	6	6	0	0	6	0	0	0	0	0	0
18	11	7	4	0	3	4	0	0	1	0	0	2
19	9	6	1	0	5	1	0	0	1	3	1	0
20	10	7	2	1	4	2	1	0	2	1	1	0
Under 21	52	30	17 (57%)	1 (3%)	12 (40%)	17	1	0	4	4	2	2
14 & Younger	1	0	0	0	0	0	0	0	0	0	0	0
15 - 19	41	23	15 (65%)	0 (0%)	8 (35%)	15	0	0	2	3	1	2
20 - 24	54	44	16 (36%)	7 (16%)	21 (48%)	16	2	5	6	10	4	1
25 - 29	43	29	10 (34%)	1 (3%)	18 (62%)	10	0	1	3	4	4	7
30 - 34	45	35	12 (34%)	0 (0%)	23 (66%)	12	0	0	4	7	10	2
35 - 39	23	16	8 (50%)	1 (6%)	7 (44%)	8	0	1	2	1	2	2
40 - 44	19	16	10 (63%)	1 (6%)	5 (31%)	10	1	0	1	1	1	2
45 - 49	18	13	10 (77%)	0 (0%)	3 (23%)	10	0	0	0	1	0	2
50 - 54	18	12	10 (83%)	0 (0%)	2 (17%)	10	0	0	0	1	0	1
55 - 59	11	8	7 (88%)	1 (13%)	0 (0%)	7	1	0	0	0	0	0
60 - 64	6	2	2 (100%)	0 (0%)	0 (0%)	2	0	0	0	0	0	0
65 - 69	11	6	5 (83%)	0 (0%)	1 (17%)	5	0	0	0	0	0	1
70 - 74	16	12	11 (92%)	0 (0%)	1 (8%)	11	0	0	1	0	0	0
75 - 79	18	10	10 (100%)	0 (0%)	0 (0%)	10	0	0	0	0	0	0
80 - 84	16	8	6 (75%)	2 (25%)	0 (0%)	6	1	1	0	0	0	0
85 & Older	4	3	3 (100%)	0 (0%)	0 (0%)	3	0	0	0	0	0	0
Total	344	237	135 (57%)	13 (5%)	89 (38%)	135	5	8	19	28	22	20

* Percentages are based on number of motor vehicle drivers tested.

TABLE 2.11

1992 ALCOHOL - RELATED CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
January	8	250	309	567	8	401
February	10	229	249	488	10	343
March	14	252	229	495	20	395
April	6	290	215	511	9	467
May	16	358	239	613	20	535
June	17	360	249	626	23	552
July	20	378	255	653	23	583
August	16	363	285	664	19	576
September	24	327	252	603	25	500
October	22	362	276	660	23	558
November	21	266	286	573	26	427
December	13	325	316	654	14	500
Total	187	3,760	3,160	7,107	220	5,837

TABLE 2.12

1992 ALCOHOL - RELATED CRASHES BY ROADWAY TYPE

Roadway Type	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Urban Interstate	11	225	212	448	15	333
Rural Interstate	3	49	54	106	3	88
Urban Trunk Hwy	12	547	480	1,039	13	862
Rural Trunk Hwy	49	597	432	1,078	62	1,005
County State Aid Hwy	71	1,180	737	1,988	82	1,832
County Road	7	160	93	260	9	273
Township Road	13	130	108	251	14	207
Local Street	17	842	999	1,858	18	1,196
Other	4	30	45	79	4	41
Total	187	3,760	3,160	7,107	220	5,837

FIGURE 2.03

1992 Alcohol-Related Crashes by Time of Day

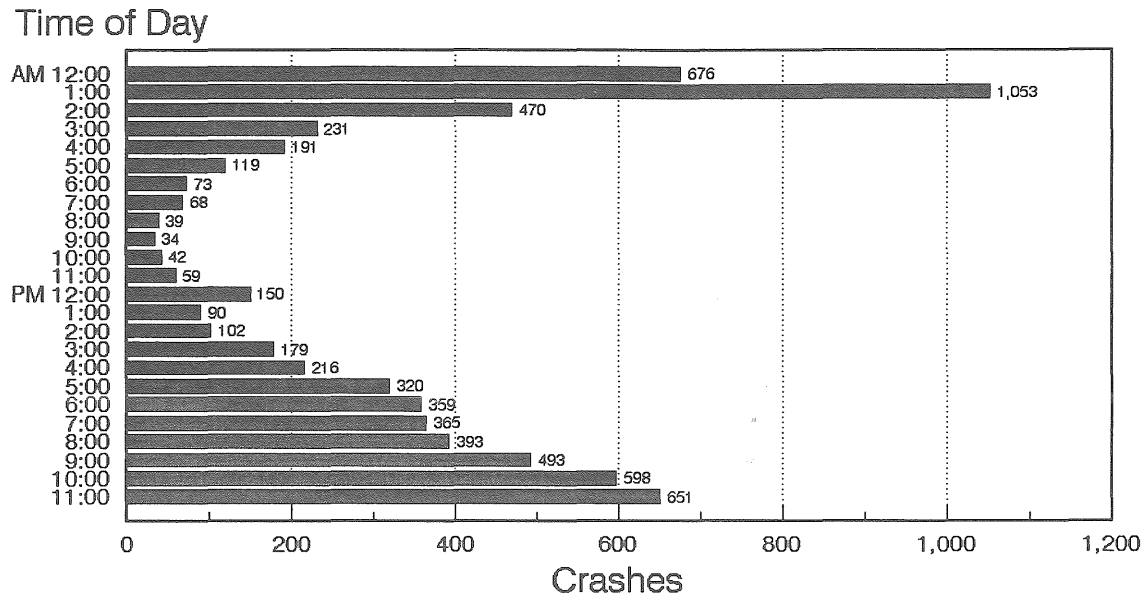


FIGURE 2.04

1992 Alcohol-Related Crashes by Day of Week

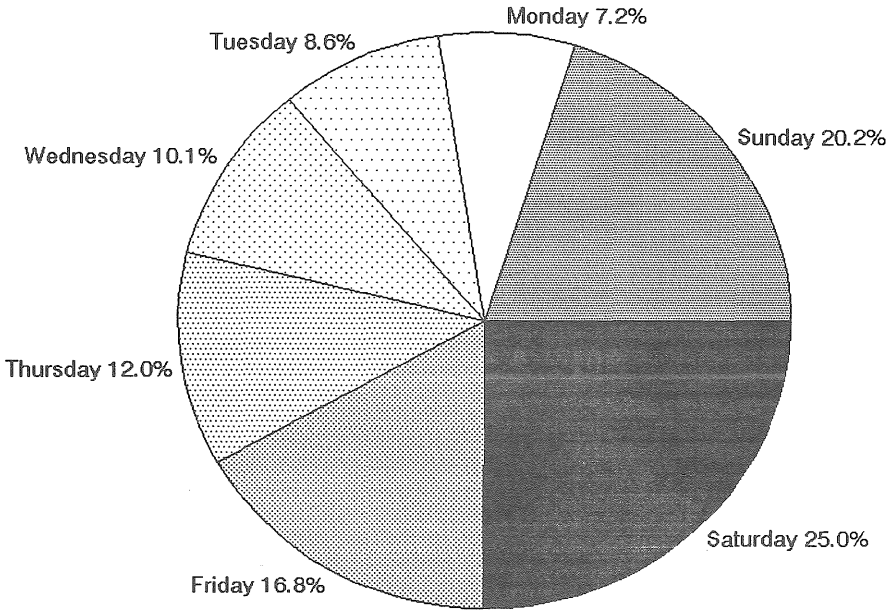


TABLE 2.13

1992 ALCOHOL - RELATED CRASHES BY TIME OF DAY AND DAY OF WEEK

Hour Beginning	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total	Killed	Injured
Midnight	168	39	34	62	79	94	200	676	34	560
1:00 AM	303	60	74	77	105	142	292	1,053	26	823
2:00 AM	144	19	36	35	46	55	135	470	20	356
3:00 AM	75	8	12	26	21	31	58	231	5	162
4:00 AM	71	3	14	8	13	21	61	191	4	158
5:00 AM	48	3	13	5	7	16	27	119	6	94
6:00 AM	25	3	7	4	4	10	20	73	4	65
7:00 AM	19	3	2	5	5	14	20	68	1	45
8:00 AM	16	3	3	2	3	5	7	39	1	52
9:00 AM	3	2	3	7	2	4	13	34	0	23
10:00 AM	11	3	3	2	3	6	14	42	1	31
11:00 AM	6	5	7	9	8	10	14	59	2	53
Noon	31	13	10	14	18	26	38	150	0	119
1:00 PM	13	7	8	13	9	14	26	90	2	80
2:00 PM	10	9	8	11	14	15	35	102	5	96
3:00 PM	34	17	16	25	28	25	34	179	7	160
4:00 PM	27	23	24	33	25	44	40	216	6	186
5:00 PM	46	33	30	30	48	54	79	320	6	283
6:00 PM	55	34	37	38	42	62	91	359	5	331
7:00 PM	56	34	36	43	54	63	79	365	15	338
8:00 PM	58	38	41	52	50	69	85	393	14	346
9:00 PM	63	42	60	56	71	93	108	493	13	442
10:00 PM	56	46	59	66	97	136	138	598	19	480
11:00 PM	67	56	64	72	89	165	138	651	21	460
Unknown	32	10	13	24	12	21	24	136	3	94
Total	1,437	513	614	719	853	1,195	1,776	7,107	220	5,837

III: SAFETY EQUIPMENT USE BY VEHICLE OCCUPANTS IN 1992 CRASHES

Types of safety equipment

The most common type of safety equipment is safety belts--a system that includes lap and shoulder belts that are operated either automatically or manually. Many recent model cars now come with driver, and sometimes passenger-side, airbags. Child safety seats are also available for children under four year of age. Other devices, such as booster seats, can be beneficial for young children over the age of four.

Safety benefits and legislation

Studies estimate that using these safety devices can reduce the risk of death and serious injury by 40% to 50%. In view of this benefit, the Minnesota Legislature enacted laws mandating safety equipment use. The Child Passenger Protection Act took effect in 1982, and was amended in 1983 and 1987. It requires children under four to be properly restrained in a federally approved child car seat. The state's mandatory seat belt law went into effect in 1986 and was amended in 1988 and 1991. It requires all front seat occupants, and children from four through ten, regardless of seating position, to wear safety belts.

Tables in this section focus on use of safety equipment by people in crashes who were occupants of vehicles normally equipped with safety equipment (e.g., passenger cars and trucks rather than motorcycles). The data are problematic in this respect, though: Safety equipment use could not be determined by the investigating officer for about a fifth of the people killed or injured. In addition, the accuracy of the remaining data (reported use and non-use) is uncertain. Assuming, though, that reporting behavior does not change radically from year to year, the data can be useful in indicating general trends in usage.

Safety Belt Use Responds to Legislation

In 1984, prior to the seat belt law, only 6% of the vehicle occupants who were killed in crashes were reported to have been using safety restraints, compared to 28% in 1992. In 1984, only 8% of the injured occupants were reported to have been using safety equipment, compared to 55% in 1992. Observational surveys of safety belt use that are conducted at random sites in the state support the belief that legislation can significantly increase safety behavior. Those surveys showed about a 12 percentage point increase in use after the first seat belt law went into effect in 1986, about a 15 point increase after the $10 fine was added in 1988, and about a 5 point increase when the fine was increased to $25 in 1991.

Almost 40,000 occupants killed or injured

In 1992, 484 vehicle occupants died and 38,521 were injured in crashes. The 15 to 19 and the 20 to 24 year old age groups experienced the most deaths and injuries--the two age groups combined accounted for 143 (30%) of the deaths and 12,334 (32%) of the injuries. (By contrast, the biggest age groups in the State population are the 25 to 29 and 30 to 34 year old age groups.)

Among crash victims, usage increase with age

Safety equipment usage in 1992 was relatively low for infants and teenagers (only 43% of those injured had reported use). It is somewhat higher for 4 through 10 year olds (50%). Starting with people in their twenties, usage begins to increase with age. About 52% of those injured who were in their twenties had reported use; the percentage increases across successive age groups up to almost 70% among those in their sixties.

Metro area has highest usage

In geographic terms, restraint use was highest (60% among killed and injured occupants) in the metro area. It was relatively low in the Northwest (39%) and West Central and Southwest (both 40%) regions of the state. In terms of types of highways, the interstates and trunk highways had relatively high use (around 60%) and the township and county roads had relatively low use (32% and 43%, respectively).

Airbag deployments

The new accident report form, initiated in 1991, allowed officers to indicate if airbags had deployed. In 1992, there were 381 individuals for whom the officer indicated that an airbag had deployed. This figure is likely to increase significantly in future years.

TABLE 3.01

MOTOR VEHICLE OCCUPANTS KILLED OR INJURED, BY AGE AND SEVERITY OF INJURY, 1992

		Injured			
Age Group	Killed	Severe	Moderate	Minor	Total
0 - 4	8	37	215	433	685
5 - 9	4	70	370	564	1,004
10 - 14	11	98	425	632	1,155
15 - 19	68	594	2,608	3,422	6,624
20 - 24	75	560	2,072	3,078	5,710
25 - 29	44	409	1,315	2,643	4,367
30 - 34	49	359	1,126	2,386	3,871
35 - 39	21	242	898	1,949	3,089
40 - 44	26	213	705	1,533	2,451
45 - 49	21	139	510	1,131	1,780
50 - 54	21	129	414	834	1,377
55 - 59	15	101	294	652	1,047
60 - 64	7	87	279	566	932
65 - 69	17	74	253	525	852
70 - 74	23	85	254	415	754
75 - 79	31	75	183	363	621
80 - 84	31	58	135	183	376
85 & Older	11	30	76	149	255
Not Stated	1	106	382	1,083	1,571
Total	484	3,466	12,514	22,541	38,521

FIGURE 3.01

Safety Equipment Use Among Motor Vehicle Occupants Killed and Injured by Age, 1992

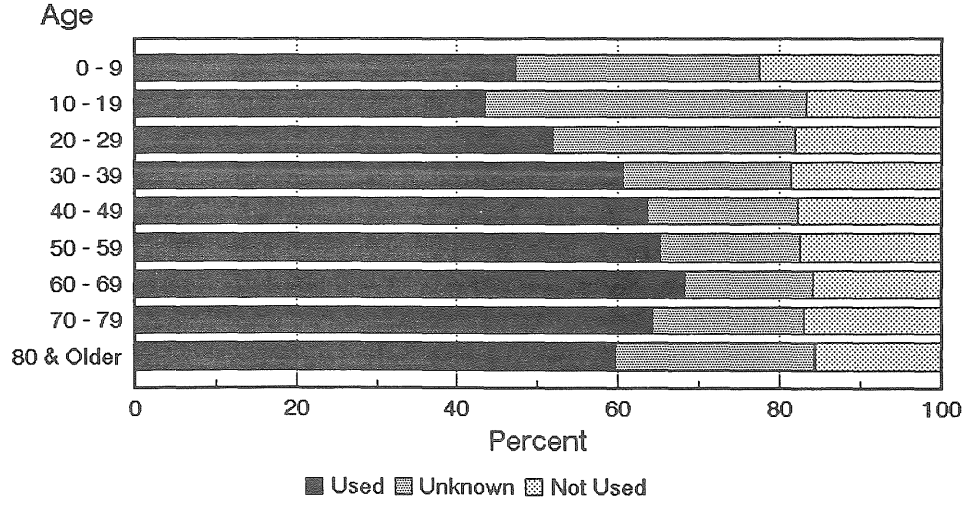


TABLE 3.02

SAFETY EQUIPMENT USE BY VEHICLE OCCUPANTS KILLED OR INJURED, BY AGE AND INJURY SEVERITY, 1992

Age Group	Restraint Use	Killed		Injured							
				Severe		Moderate		Minor		Total	
		#	%	#	%	#	%	#	%	#	%
0 - 3	Used	4	50.0	8	30.8	59	40.4	145	45.5	212	43.2
Years	Not Used	3	37.5	9	34.6	43	29.5	95	29.8	147	29.9
	Unknown	1	12.5	9	34.6	44	30.1	79	24.8	132	26.9
	Subtotal	8	100.0	26	100.0	146	100.0	319	100.0	491	100.0
4 - 10	Used	1	25.0	29	31.9	258	50.5	420	51.8	707	50.0
Years	Not Used	1	25.0	38	41.8	148	29.0	230	28.4	416	29.4
	Unknown	2	50.0	24	26.4	105	20.5	161	19.9	290	20.5
	Subtotal	4	100.0	91	100.0	511	100.0	811	100.0	1,413	100.0
11 - 19	Used	19	24.1	175	25.7	1,128	38.1	1,980	50.5	3,283	43.4
Years	Not Used	53	67.1	366	53.7	1,376	46.5	1,276	32.5	3,018	39.9
	Unknown	7	8.9	141	20.7	457	15.4	665	17.0	1,263	16.7
	Subtotal	79	100.0	682	100.0	2,961	100.0	3,921	100.0	7,564	100.0
20 - 29	Used	22	18.5	293	30.2	1,500	44.3	3,479	60.8	5,272	52.3
Years	Not Used	76	63.9	454	46.9	1,320	39.0	1,222	21.4	2,996	29.7
	Unknown	21	17.6	222	22.9	567	16.7	1,020	17.8	1,809	18.0
	Subtotal	119	100.0	969	100.0	3,387	100.0	5,721	100.0	10,077	100.0
30 - 39	Used	15	21.4	267	44.4	1,071	52.9	2,909	67.1	4,247	61.0
Years	Not Used	41	58.6	215	35.8	571	28.2	639	14.7	1,425	20.5
	Unknown	14	20.0	119	19.8	382	18.9	787	18.2	1,288	18.5
	Subtotal	70	100.0	601	100.0	2,024	100.0	4,335	100.0	6,960	100.0
40 - 49	Used	14	29.8	155	44.0	703	57.9	1,855	69.6	2,713	64.1
Years	Not Used	30	63.8	118	33.5	284	23.4	364	13.7	766	18.1
	Unknown	3	6.4	79	22.4	228	18.8	445	16.7	752	17.8
	Subtotal	47	100.0	352	100.0	1,215	100.0	2,664	100.0	4,231	100.0
50 - 59	Used	14	38.9	113	49.1	449	63.4	1,028	69.2	1,590	65.6
Years	Not Used	18	50.0	84	36.5	146	20.6	180	12.1	410	16.9
	Unknown	4	11.1	33	14.3	113	16.0	278	18.7	424	17.5
	Subtotal	36	100.0	230	100.0	708	100.0	1,486	100.0	2,424	100.0
60 - 69	Used	11	45.8	77	47.8	345	64.8	802	73.5	1,224	68.6
Years	Not Used	12	50.0	47	29.2	105	19.7	121	11.1	273	15.3
	Unknown	1	4.2	37	23.0	82	15.4	168	15.4	287	16.1
	Subtotal	24	100.0	161	100.0	532	100.0	1,091	100.0	1,784	100.0
70 &	Used	33	34.4	130	52.4	394	60.8	762	68.6	1,286	64.1
Older	Not Used	49	51.0	70	28.2	151	23.3	165	14.9	386	19.2
	Unknown	14	14.6	48	19.4	103	15.9	183	16.5	334	16.7
	Subtotal	96	100.0	248	100.0	648	100.0	1,110	100.0	2,006	100.0
Age	Used	0	0.0	23	21.7	164	42.9	451	41.6	638	40.6
Not	Not Used	0	0.0	43	40.6	106	27.7	190	17.5	339	21.6
Stated	Unknown	1	100.0	40	37.7	112	29.3	442	40.8	594	37.8
	Subtotal	1	100.0	106	100.0	382	100.0	1,083	100.0	1,571	100.0
All	Used	133	27.5	1,270	36.6	6,071	48.5	13,831	61.4	21,172	55.0
Ages	Not Used	283	58.5	1,444	41.7	4,250	34.0	4,482	19.9	10,176	26.4
	Unknown	68	14.0	752	21.7	2,193	17.5	4,228	18.8	7,173	18.6
	Total	484	100.0	3,466	100.0	12,514	100.0	22,541	100.0	38,521	100.0

(Persons aged 0 through 3 and 4 through 10 years old are categorized in separate groups because Minnesota law makes special provisions for these age groups. Percentages may not sum to 100.0% due to rounding.)

TABLE 3.03

MOTOR VEHICLE OCCUPANTS BY INJURY SEVERITY, AIRBAG DEPLOYMENT AND BELT USE,* 1992

	Airbag Deployed		Airbag Not in Vehicle or Not Deployed		Safety Restraint Use	
	Belt Used	Belt Not Used	Belt Used	Belt Not Used	Unknown	Total
Killed	4	2	129	281	68	484
Injured						
Severe	17	4	1,253	1,440	752	3,466
Moderate	63	11	6,008	4,239	2,193	12,514
Minor	85	11	13,746	4,471	4,228	22,541
No Apparent Injury	173	11	74,716	12,008	106,957	193,865
Total	342	39	95,852	22,439	114,198	232,870

* "Belt use" is used as a shorthand term for safety restraint use. Safety restraint devices are normally lap or shoulder belts, but they can also be child safety seats or booster seats.

TABLE 3.04

PERCENT OF INJURED OR KILLED MOTOR VEHICLE OCCUPANTS WHO USED SAFETY EQUIPMENT, BY INJURY SEVERITY AND YEAR, 1984 - 1992

	1984	1985	1986	1987	1988	1989	1990	1991	1992
Killed									
Used	5.8%	8.8%	9.2%	17.7%	21.1%	20.5%	20.9%	24.4%	27.5%
Not Used	64.5	70.8	69.7	67.9	64.1	63.8	65.9	57.0	58.5
Unknown	29.7	20.4	21.1	14.4	14.8	15.7	13.2	18.5	14.0
Injured									
Severe Injuries									
Used	5.9	8.4	16.9	22.0	30.5	31.6	32.6	35.7	36.6
Not Used	46.3	60.3	57.8	55.1	48.9	47.9	48.4	40.7	41.7
Unknown	47.8	31.3	25.4	22.9	20.6	20.5	18.9	23.6	21.7
Moderate Injuries									
Used	7.4	10.7	20.8	29.3	38.2	39.9	41.1	45.9	48.5
Not Used	44.8	58.8	53.4	48.4	41.7	40.6	40.2	33.7	34.0
Unknown	47.8	30.4	25.9	22.3	20.1	19.5	18.7	20.4	17.5
Minor Injuries									
Used	9.0	14.4	25.7	36.2	42.9	45.5	45.3	54.3	61.4
Not Used	34.7	45.6	38.9	32.2	24.4	21.9	23.1	19.8	19.9
Unknown	56.3	40.0	35.3	31.6	32.7	32.6	31.6	25.9	18.8
Total Injured									
Used	8.0	12.4	23.0	32.0	39.9	42.3	42.7	49.8	55.0
Not Used	49.1	54.2	46.5	40.9	32.9	30.7	31.2	26.3	26.4
Unknown	42.9	33.4	30.5	27.1	27.1	27.0	26.1	23.9	18.6

TABLE 3.05

SAFETY EQUIPMENT USE BY MOTOR VEHICLE OCCUPANTS KILLED AND INJURED, BY ROADWAY TYPE, 1992

	Used		Not Used		Unknown		Total	
Roadway Type	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Interstate	1,809	63.1	659	23.0	401	14.0	2,869	100.0
Trunk Highway	8,191	58.1	3,614	25.6	2,286	16.2	14,091	100.0
County State-Aid Highway	5,951	53.2	2,992	26.8	2,233	20.0	11,176	100.0
County Road	521	43.1	453	37.4	236	19.5	1,210	100.0
Township Road	326	32.3	455	45.1	227	22.5	1,008	100.0
Local Street	4,414	52.3	2,227	26.4	1,794	21.3	8,435	100.0
Other Road	93	43.1	59	27.3	64	29.6	216	100.0
Total	21,305	54.6	10,459	26.8	7,241	18.6	39,005	100.0

TABLE 3.06

SAFETY EQUIPMENT USE BY MOTOR VEHICLE OCCUPANTS KILLED AND INJURED, BY EMS REGION* OF STATE, 1992

EMS Region	Percent Used	Percent Not Used	Percent Unknown	Number of People
Metropolitan	59.9	21.3	18.8	21,500
Central	51.1	31.9	17.0	4,920
Northeast	50.2	30.5	19.4	2,320
Northwest	38.7	38.6	22.8	1,107
South Central	46.3	35.9	17.8	1,584
Southeast	54.6	30.6	14.9	3,640
Southwest	40.3	40.5	19.2	2,191
West Central	39.8	35.8	24.4	1,600
Unknown	52.4	25.2	22.4	143
Statewide	54.6	26.8	18.6	39,005

*There are eight Emergency Medical Services (EMS) regions in the state, shown in the map at right.

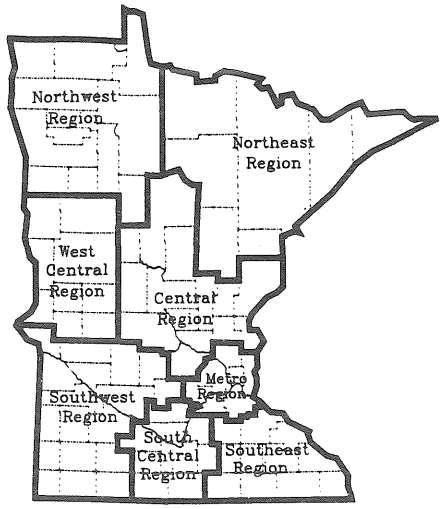


TABLE 3.07

PERCENT OF FRONT SEAT OCCUPANTS WEARING SAFETY BELTS, BY DATE OF OBSERVATION STUDY

	June 1986	Aug 1986	Nov 1986	Aug 1987	Aug 1988	Aug 1989	Aug 1990	Aug 1991	Aug 1992
Statewide	**20%**	**33%**	**32%**	**32%**	**47%**	**44%**	**47%**	**53%**	**51%**
Metro	30	43	39	40	51	52	54	62	62
Non-Metro	15	26	24	28	45	40	42	47	46
Weather									
Clear	19	32	33	32	47	44	47	53	52
Other	23	36	19	41	48	53	50	48	41
Time									
Rush Hour	21	31	30	30	47	42	47	53	55
Non-rush Hour	20	34	32	33	47	44	48	52	51
Day of the Week									
Weekday	19	33	33	32	45	42	45	51	51
Weekend	21	33	29	33	52	49	50	56	53
Speed									
20 MPH	14	29	33	29	35	39	46	47	39
40 MPH	20	32	27	30	47	46	46	56	58
60 MPH	28	39	36	41	57	52	53	61	62
Road Class									
Major Roads	23	35	31	35	48	44	49	53	55
Local Roads	17	31	32	29	46	45	46	52	48

The seat belt law, which requires all front seat passengers and all passengers under the age of eleven to wear safety belts, became effective in Minnesota on August 1, 1986. Only the use of shoulder belts could be observed in the observation studies. The June 1986 study was conducted prior to the implementation of this law; all other studies were conducted after the law went into effect. The August 1988 study was conducted after the amendment adding a $10.00 fine went into effect. The August 1991 study was conducted after an amendment increasing the fine to $25.00 went into effect.

The usage rate is not a simple ratio of the number of persons observed belted to the total number of people observed. It is, instead, the ratio of estimated time on the road that front seat occupants are using safety belts to the total estimated time on the road for these occupants.

IV: MOTORCYCLE CRASHES

Motorcyclists are exposed to a greater chance of injury should a crash occur because they are not protected by the body of a vehicle. In 1992, 85% of motorcycle crashes resulted in an injury or fatality; for total motor vehicle crashes, only 31% of the crashes produced an injury or fatality. Motorcycle crashes were more than four times more likely to involve a fatality.

Crashes down from 1991

There were 1,361 crashes that involved motorcycles in 1992. This is 100 fewer crashes than last year. Of these crashes, 2% involved a fatality, 83% involved non-fatal injuries, and 15% involved only property damage.

Fatalities at 25 year low

There were 28 motorcyclists killed in 1992 (23 drivers and 5 passengers). This is the lowest number since 1967 when there were 25 fatalities. There was also a motorcyclist killed who was counted as a pedestrian because he had fallen off of his bike and was standing in the roadway when struck. There were 1,288 motorcyclists injured in these crashes.

Higher percentage of overturns

Just under half of motorcycle crashes involved a collision with another motor vehicle, and 22% were overturn crashes. In contrast, only 5% of all motor vehicle crashes were overturn crashes. Another 10% of motorcycle crashes were collisions with fixed objects.

Areas under 1,000 population

Over 25% of the crashes, 39% of the fatalities, and 29% of the injuries occurred in areas of under 1,000 population. Areas of over 100,000 population, on the other hand, accounted for 19% of the crashes, 11% of the fatalities, and 17% of the injuries.

May through October riding season

Not surprisingly, 92% of motorcycle crashes occurred during the months of May through October. June had the most crashes (248); January had the least (0). May had the most fatalities (6); June had the most injuries (244).

Afternoon rush hours most crash-involved

Twenty-three percent of the crashes occurred in the afternoon hours from 4:00 to 7:00 PM. Fatal crashes were more evenly distributed throughout the day, with the most fatal crashes in a single hour (4) between 10:00 and 11:00 PM.

Most crashes on weekends

Of the days of the week, Saturday had the most crashes (259) and Tuesday the least (139). The highest number of fatal crashes was on Friday. More than half of all crashes, and 66% of fatal crashes, happened on a Friday, Saturday, or Sunday.

Injuries between 15 and 44 years old

Over 80% of the injuries and fatalities sustained by motorcyclists were to people between 15 and 44 years old. The majority were male -- 93% of the fatalities and 86% of the injuries. Of those motorcyclists who sustained non-fatal injuries, 25% were severe, 52% were moderate, and 23% were minor. At least 82% of motorcyclists killed and 53% of motorcyclists injured were not wearing a helmet at the time of the crash.

Almost one-third of drivers in fatal crashes had no endorsement

Nearly one-third of the motorcyclists in fatal crashes did not have a motorcycle endorsement or did not have a valid license at the time of the crash.

Half over limit

Of the 23 motorcycle drivers killed, 21 (91%) were tested for alcohol concentration. Of these, 11 (52%) were over the limit to operate a motor vehicle in Minnesota -- .10. No one over 40 years old tested positive for alcohol.

Motorcyclists less likely to contribute to multi-vehicle crashes

For 51% of motorcyclists in multi-vehicle crashes, officers cited no improper driving; this was true of 20% of motorcyclists in single vehicle crashes. For single vehicle crashes the top two contributing factors cited were illegal or unsafe speed, followed by physical impairment. For multi-vehicle crashes, motorcyclists' top contributing factors were driver inattention/ distraction, followed by illegal or unsafe speed. For the other drivers in these crashes, the top factors were failure to yield the right of way, followed by driver inattention/distraction.

TABLE 4.01

MOTORCYCLE CRASH SUMMARY, 1983 - 1992

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	Record High (since 1970)
Total Crashes	**2,811**	**2,768**	**2,748**	**2,318**	**2,121**	**1,969**	**1,748**	**1,735**	**1,461**	**1,361**	**3,308 (1980)**
Fatal Crashes	70	59	75	63	51	57	37	46	38	29	112 (1980)
Personal Injury Crashes	2,377	2,302	2,238	1,891	1,692	1,628	1,463	1,446	1,198	1,133	2,728 (1980)
Property Damage Crashes	364	407	435	364	378	284	248	243	225	199	537 (1976)
Persons Killed:											
Motorcyclists	73	62	77	66	51	58	37	50	40	28	121 (1980)
Non-Motorcyclists/Unknown	0	1	1	0	3	4	0	2	0	3	9 (1975)
Persons Injured:											
Motorcyclists*	2,678	2,590	2,500	2,152	1,853	1,817	1,617	1,605	1,357	1,288	3,359 (1980)
Non-Motorcyclists/Unknown	191	207	204	142	145	126	104	126	104	60	N/A
Licensed Operators	252,808	256,836	272,317	282,087	288,424	293,347	290,000	292,074	296,624	290,722	296,624 (1991)
Registered Motorcycles	155,502	153,851	151,449	141,261	134,590	128,956	123,308	120,081	117,492	116,124	166,151 (1981)
Rates:											
Fatal Motorcycle Crashes Per 100 Motorcycle Crashes	2.5	2.2	2.7	2.7	2.4	2.9	2.1	2.7	2.6	2.1	3.6 (1978)
Fatal Crashes Per 100 Crashes (All Vehicles)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.8 (1970)

* 1983 and 1984 injury figures include some all-terrain vehicles. Fatality figures do not.

TABLE 4.02

1992 MOTORCYCLE CRASHES BY FIRST HARMFUL EVENT

First Harmful Event	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Motorcyclists Killed	Motorcyclists Injured
Collision With:						
Other Motor Vehicle	9	516	122	647	8	587
Parked Motor Vehicle	0	9	27	36	0	12
Train	1	0	1	2	1	0
Bicycle	0	6	0	6	0	4
Pedestrian	2	7	0	9	0	6
Deer	1	50	4	55	1	55
Other Animal	0	16	1	17	0	22
Fixed Object	7	129	6	142	8	148
Falling Object	1	2	2	5	1	3
Non-Collision:						
Overturn	6	268	22	296	6	305
Other	2	123	14	139	3	139
Unknown	0	7	0	7	0	7
Total	29	1,133	199	1,361	28	1,288

TABLE 4.03

1992 MOTORCYCLE CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Motorcyclists Killed	Motorcyclists Injured
100,000 and Over	3	204	57	264	3	218
50,000 - 99,999	0	50	9	59	0	53
25,000 - 49,999	3	188	30	221	4	211
10,000 - 24,999	5	145	31	181	4	161
5,000 - 9,999	4	112	10	126	4	129
2,500 - 4,999	0	38	15	53	0	46
1,000 - 2,499	0	25	5	30	0	28
Under 1,000	11	307	34	352	11	369
Unknown	3	64	8	75	2	73
Total	29	1,133	199	1,361	28	1,288

TABLE 4.04

1992 MOTORCYCLE CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Motorcyclists Killed	Motorcyclists Injured
January	0	0	0	0	0	0
February	0	4	0	4	0	5
March	3	9	3	15	4	10
April	1	67	15	83	1	69
May	6	193	43	242	6	220
June	4	217	27	248	4	244
July	3	200	31	234	3	234
August	4	194	31	229	3	231
September	7	158	27	192	6	178
October	1	87	21	109	1	92
November	0	2	0	2	0	3
December	0	2	1	3	0	2
Total	29	1,133	199	1,361	28	1,288

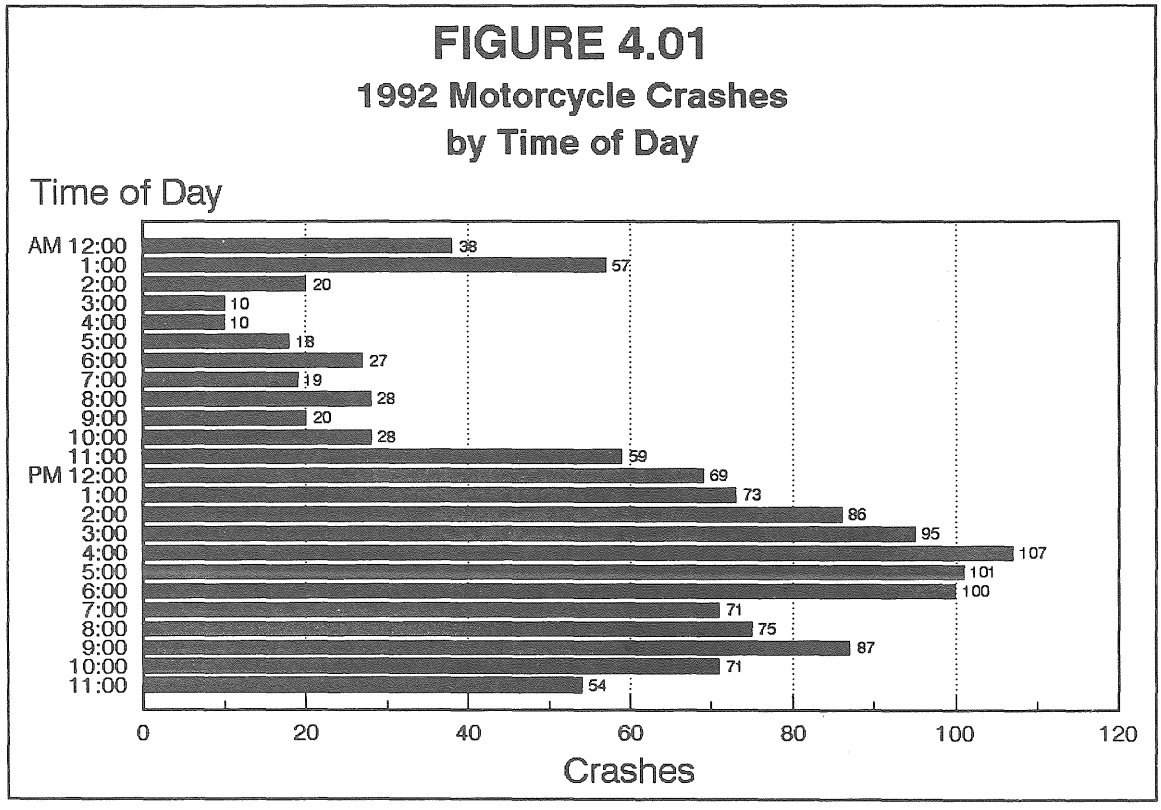


TABLE 4.05

1992 MOTORCYCLE CRASHES BY TIME AND DAY

Hour Beginning	Total Crashes	Fatal Crashes	Sunday		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday	
			All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal
Midnight	38	1	6	0	3	0	1	0	5	0	9	0	4	0	10	1
1:00	57	3	11	0	5	0	5	0	5	0	2	0	11	2	18	1
2:00	20	2	8	0	2	0	0	0	2	1	4	1	2	0	2	0
3:00	10	1	2	0	0	0	2	0	1	0	0	0	2	1	3	0
4:00	10	0	1	0	2	0	1	0	2	0	1	0	2	0	1	0
5:00	18	1	4	0	0	0	3	0	4	1	3	0	2	0	2	0
6:00	27	1	3	1	1	0	3	0	5	0	10	0	5	0	0	0
7:00	19	2	2	1	4	0	1	0	0	0	6	0	3	1	3	0
8:00	28	0	1	0	7	0	4	0	2	0	6	0	4	0	4	0
9:00	20	1	3	1	3	0	1	0	3	0	3	0	2	0	5	0
10:00	28	0	2	0	3	0	2	0	2	0	5	0	4	0	10	0
11:00	59	1	9	0	3	0	5	0	8	0	9	0	11	1	14	0
Noon	69	0	18	0	9	0	6	0	6	0	8	0	10	0	12	0
1:00	73	0	10	0	8	0	7	0	12	0	8	0	9	0	19	0
2:00	86	1	17	0	12	0	11	0	9	0	13	0	14	1	10	0
3:00	95	2	11	1	12	0	9	0	16	0	14	1	14	0	19	0
4:00	107	3	20	1	14	1	7	0	15	0	14	0	15	0	22	1
5:00	101	1	17	0	18	0	14	0	14	0	9	0	13	1	16	0
6:00	100	0	21	0	8	0	11	0	14	0	8	0	16	0	22	0
7:00	71	1	14	0	8	0	7	0	7	0	10	0	12	0	13	1
8:00	75	1	11	0	9	0	6	0	6	0	17	0	13	0	13	1
9:00	87	1	10	0	8	0	14	0	13	0	12	0	22	1	8	0
10:00	71	4	6	1	5	1	10	0	7	0	14	2	11	0	18	0
11:00	54	1	14	0	2	0	7	1	5	0	7	0	10	0	9	0
Not Stated	38	1	6	0	7	1	2	0	4	0	8	0	5	0	6	0
Total	1,361	29	227	6	153	3	139	1	167	2	200	4	216	8	259	5

TABLE 4.06

MOTORCYCLISTS KILLED OR INJURED BY AGE AND GENDER, 1992

	Killed			Injured											
				Severe			Moderate			Minor			Total		
Age Group	M	F	Total	M	F	Total*	M	F	Total*	M	F	Total*	M	F	Total*
0 - 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - 9	1	0	1	0	0	0	0	2	2	1	1	2	1	3	4
10 - 14	1	0	1	5	0	5	11	3	14	0	0	0	16	3	19
15 - 19	4	0	4	29	7	36	87	12	99	39	8	47	155	27	182
20 - 24	6	0	6	76	8	85	144	21	166	60	4	65	280	33	316
25 - 29	5	1	6	45	9	54	86	10	96	49	10	59	180	29	209
30 - 34	4	1	5	39	13	52	76	11	87	30	6	37	145	30	176
35 - 39	2	0	2	26	4	30	74	7	81	18	3	21	118	14	132
40 - 44	2	0	2	20	3	23	49	7	56	21	2	23	90	12	102
45 - 49	0	0	0	14	0	14	23	4	27	15	0	15	52	4	56
50 - 54	1	0	1	7	1	8	10	1	11	4	3	7	21	5	26
55 - 59	0	0	0	4	0	4	7	0	7	7	2	9	18	2	20
60 - 64	0	0	0	2	0	2	6	2	8	1	0	1	9	2	11
65 - 69	0	0	0	0	0	0	1	0	1	1	0	1	2	0	2
70 & Older	0	0	0	3	0	3	1	1	2	1	0	1	5	1	6
Not Stated	0	0	0	6	1	7	11	4	16	3	0	4	20	5	27
Total	26	2	28	276	46	323	586	85	673	250	39	292	1,112	170	1,288

* Where columns do not add across to total, gender was not reported on the accident report form.

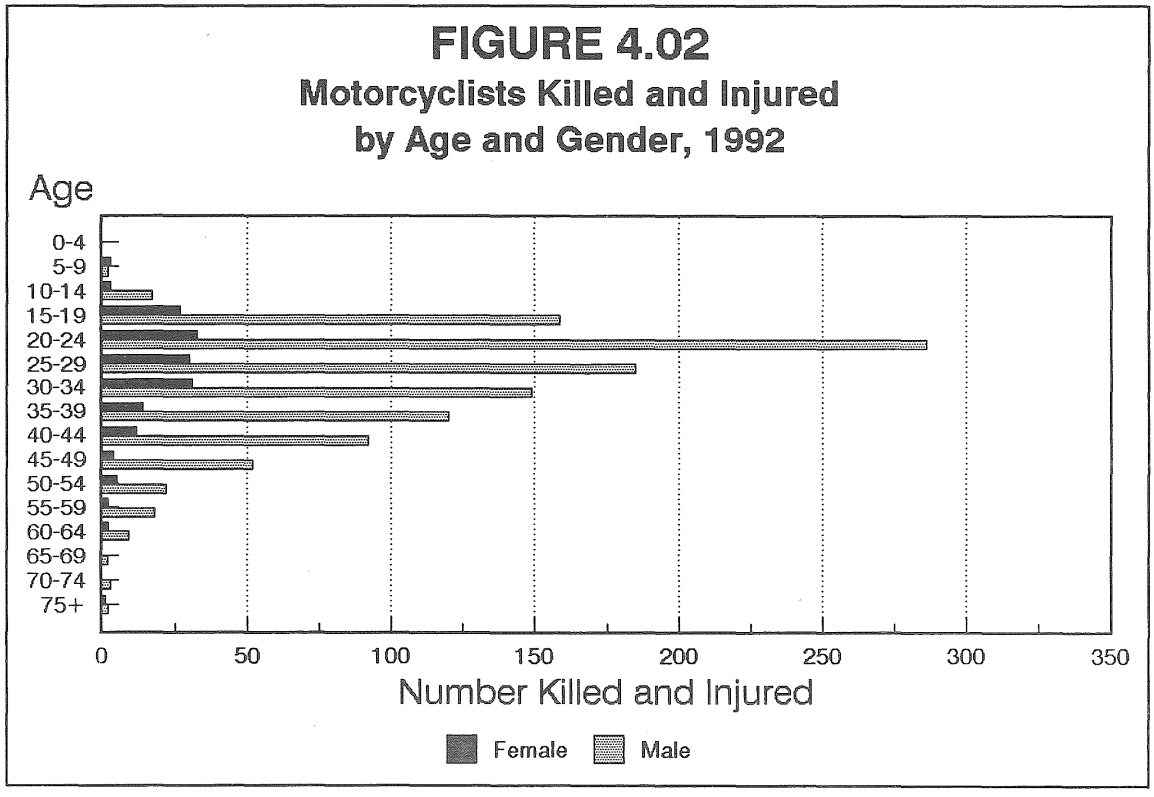


TABLE 4.07

HELMET USE BY MOTORCYCLISTS KILLED OR INJURED, 1988 - 1992

	Helmet Used		Helmet Not Used		Helmet Use Unknown		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Killed								
1988	12	20.7%	41	70.7%	5	8.6%	58	100.0%
1989	4	10.8	29	78.4	4	10.8	37	100.0
1990	2	4.0	42	84.0	6	12.0	50	100.0
1991	11	27.5	24	60.0	5	12.5	40	100.0
1992	2	7.1	23	82.1	3	10.7	28	100.0
Injured								
1988	506	27.8	1,007	55.4	304	16.7	1,817	100.0
1989	447	27.6	886	54.8	284	17.6	1,617	100.0
1990	419	26.1	917	57.1	269	16.8	1,605	100.0
1991	310	22.8	594	43.8	453	33.4	1,357	100.0
1992	349	27.1	678	52.6	261	20.3	1,288	100.0

TABLE 4.08

ENDORSEMENT STATUS OF MOTORCYCLE OPERATORS INVOLVED IN FATAL CRASHES, 1983 - 1992

	Valid Endorsement*		Permit Only		Cancelled, Suspended, Revoked		No Endorsement		Total** For Year	
Year	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1983	47	68.1%	6	8.7%	3	4.3%	13	18.8%	69	100.0%
1984	50	73.5	1	1.5	3	4.4	14	20.6	68	100.0
1985	50	64.9	5	6.5	7	9.1	15	19.5	77	100.0
1986	41	64.1	1	1.6	7	10.9	15	23.4	64	100.0
1987	33	64.7	1	2.0	10	19.6	7	13.7	51	100.0
1988	32	55.2	3	5.2	9	15.5	13	22.4	58	100.0
1989	22	56.4	0	0.0	8	20.5	9	23.1	39	100.0
1990	25	53.2	2	4.3	9	19.1	11	23.4	47	100.0
1991	28	71.8	1	2.6	4	10.3	5	12.8	39	100.0
1992	17	60.7	0	0.0	5	17.9	4	14.3	28	100.0

* A valid endorsement means that the driver's license has been "endorsed" to permit operation of a motorcycle.
** Rows may not add to total due to the unknown status of some motorcycle operators.

TABLE 4.09

ALCOHOL USE BY MOTORCYCLE DRIVERS, 1983 - 1992

Year	Killed	Tested	Alcohol Concentration* (.00)	(.01 - .09)	(.10 or more)
1983	56	36	12 (33%)	4 (11%)	20 (56%)
1984	57	45	13 (29%)	9 (20%)	23 (51%)
1985	63	51	18 (35%)	8 (16%)	25 (49%)
1986	56	46	16 (35%)	5 (11%)	25 (54%)
1987	45	42	17 (40%)	3 (7%)	22 (52%)
1988	52	45	20 (44%)	8 (18%)	17 (38%)
1989	31	30	9 (30%)	3 (10%)	18 (60%)
1990	43	35	10 (29%)	5 (14%)	20 (57%)
1991	36	30	13 (43%)	3 (10%)	14 (47%)
1992	23	21	10 (48%)	0 (0%)	11 (52%)

*Percentages are based on those motorcycle drivers tested.

TABLE 4.10

1992 MOTORCYCLE DRIVER FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY AGE

Age	Killed	Tested	Alcohol Concentration* (.01 - .09)	(.10 or more)	Alcohol Concentration .00	.01-.04	.05-.09	.10-.14	.15-.19	.20-.24	.25 & Over
15	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0
17	2	1	0	0	1	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0
19	2	2	0	2	0	0	0	1	1	0	0
20	0	0	0	0	0	0	0	0	0	0	0
Under 21	4	3	0	2	1	0	0	1	1	0	0
14 & Younger	0	0	0	0	0	0	0	0	0	0	0
15 - 19	4	3	0	2 (67%)	1	0	0	1	1	0	0
20 - 24	6	5	0	3 (60%)	2	0	0	2	1	0	0
25 - 29	4	4	0	2 (50%)	2	0	0	0	0	2	0
30 - 34	4	4	0	3 (75%)	1	0	0	0	2	1	0
35 - 39	2	2	0	1 (50%)	1	0	0	0	0	1	0
40 - 44	2	2	0	0 (0%)	2	0	0	0	0	0	0
45 - 49	0	0	0	0	0	0	0	0	0	0	0
50 - 54	1	1	0	0 (0%)	1	0	0	0	0	0	0
55 - 59	0	0	0	0	0	0	0	0	0	0	0
60 & Older	0	0	0	0	0	0	0	0	0	0	0
Total	23	21	0 (0%)	11 (52%)	10	0	0	3	4	4	0

* Percentages are based on those motorcycle drivers tested.

TABLE 4.11

CONTRIBUTING FACTORS IN 1992 MOTORCYCLE CRASHES

	Single Vehicle Crashes		*Multi-Vehicle Crashes*			
	Attributed to Motorcycle Drivers		Attributed to Motorcycle Drivers		Attributed to Other Drivers	
Contributing Factors	Number	Percent	Number	Percent	Number	Percent
Human Factors:						
Illegal/Unsafe Speed	221	29.7%	100	18.6%	24	3.5%
Driver Inattention/Distraction	84	11.3	118	21.9	126	18.3
Driver Inexperience	76	10.2	36	6.7	12	1.7
Physical Impairment	104	14.0	29	5.4	20	2.9
Improper/Unsafe Lane Use	28	3.8	26	4.8	49	7.1
Following Too Closely	4	0.5	55	10.2	28	4.1
Failure to Yield Right of Way	7	0.9	40	7.4	223	32.4
Improper Passing/Overtaking	9	1.2	35	6.5	5	0.7
Disregard for Traffic Control Device	10	1.3	16	3.0	24	3.5
Driving Left of Roadway Center--Not Passing	11	1.5	15	2.8	12	1.7
Vision Obscured	7	0.9	6	1.1	36	5.2
Improper Turn	3	0.4	7	1.3	37	5.4
Improper Parking/Starting/ Stopping	4	0.5	1	0.2	15	2.2
Unsafe Backing	0	0.0	0	0.0	6	0.9
Impeding Traffic	1	0.1	1	0.2	2	0.3
Improper or No Signal	0	0.0	4	0.7	11	1.6
Pedestrian Violation	0	0.0	0	0.0	14	2.0
Failure to Use Lights	3	0.4	3	0.6	2	0.3
Driver on Phone or CB Radio	0	0.0	1	0.2	1	0.1
Other Human Factor	19	2.6	6	1.1	5	0.7
Vehicular Factors:						
Skidding	60	8.1	10	1.9	4	0.6
Defective Equipment	17	2.3	6	1.1	6	0.9
Other Vehicular Factors	17	2.3	2	0.4	0	0.0
Miscellaneous Factors:						
Weather Conditions	10	1.3	4	0.7	5	0.7
Other	48	6.5	18	3.3	22	3.2
Total	743	100.0%	539	100.0%	689	100.0%
No Improper Driving	122		405		281	
Total Number Drivers	608		790		773	

Zero, one, or two contributing factors may be attributed to a single driver. This may cause the sum of the factors cited to differ from the number of drivers. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding. Bicyclists and pedestrians are included as other drivers in this table.

V: TRUCK CRASHES

This section summarizes data on crashes involving trucks. On the accident report form, trucks are identified as any of the following eight types of vehicles: (1) 2-axle, 6-tire single unit truck or stepvan, (2) 3-or-more-axle single unit truck, (3) single-unit truck with trailer, (4) truck tractor with no trailer, (5) truck tractor with semi-trailer, (6) truck tractor with double trailers, (7) truck tractor with triple trailers, (8) heavy truck of other or unknown type. A crash involving any of these vehicles is classified as a truck crash. Pickup trucks and vans are not counted as trucks.

Crashes decrease from 1991

In 1992, there were 4,463 truck crashes: 65 were fatal crashes, 1,213 were injury crashes, and 3,185 were property damage only crashes. Eighty-four people died, and 1,721 were injured. Total truck crashes went down 13% from 1991, but that reduction occurred mainly in the less serious property damage only crashes, which decreased 17% from 1991. Fatal crashes decreased 10% and injury crashes decreased only 3% from 1991.

Killed and injured are mainly in cars

Truck drivers are often professional drivers who may have better than average driving records. When vehicles of greatly different sizes collide, however, occupants of the larger vehicles frequently have greater protection. Only 5 of the 84 people killed in 1992 truck crashes were truck occupants; most (64) of the rest were occupants in passenger cars. Among those injured, 428 (25%) were truck occupants, and 934 (54%) were car occupants. The remainder were pedestrians or were in other types of vehicles, such as pickups or motorcycles.

Contributing factors are similar year to year

Each year the contributing factors most often cited by officers are the same for both the truck drivers and the drivers of the other vehicles involved in truck crashes. In 1992, "driver inattention or distraction" was cited most often, accounting for about 16% of all factors cited for both truck and other motor vehicle drivers. "Failure to yield right of way" accounted for 11% of the factors cited for truck drivers and 19% of the factors cited for other motor vehicle drivers. "Illegal or unsafe speed" represented 10% of the factors cited for truck drivers, and 13% of the factors cited for other motor vehicle drivers. Cited fourth most often was "improper or unsafe lane use," accounting for a little less than 10% of all factors cited for both truck and other motor vehicle drivers.

Physical condition almost always "normal"

Officers indicate the apparent physical condition of drivers in crashes. "Normal" is almost always indicated, especially for truck drivers. The conditions "had been drinking" or "under the influence" were indicated for only 19 of 4,454 truck drivers. Those conditions were indicated for 116 (still only 3%) of the drivers of the other vehicles involved in truck crashes.

Truck crashes are workday related

Truck crashes differ from other crashes in terms of the days of the week and the time of day they occur. Other crashes are fairly evenly distributed across days of the week. Also, they occur predominantly during daylight hours, rising to a peak during the afternoon rush hour period. In contrast, truck crashes are more strongly workday related than crashes in general: 91% occur on Monday through Friday (compared to 75% for crashes in general). Also, 76% occur between 7:00 AM and 5:59 PM, compared to 62% for crashes in general.

TABLE 5.01

TRUCK CRASH SUMMARY, 1985 - 1992

	1985	1986	1987	1988	1989	1990	1991	1992
Total Crashes	**7,973**	**6,908**	**5,668**	**7,038**	**7,381**	**6,712**	**5,152**	**4,463**
Fatal Crashes	86	85	65	70	77	70	72	65
Persons Killed	101	100	71	78	94	83	85	84
Injury Crashes	1,941	1,674	1,443	1,729	1,784	1,652	1,250	1,213
Severe	337	266	232	282	247	225	137	167
Moderate	755	615	548	604	586	617	477	418
Minor	845	793	663	843	951	810	636	628
Persons Injured	2,798	2,371	2,033	2,444	2,411	2,390	1,762	1,721
Severe	447	347	291	362	293	285	179	222
Moderate	1,048	859	767	856	777	876	667	560
Minor	1,303	1,165	975	1,226	1,341	1,229	916	939
Property Damage Crashes	6,424	5,149	4,160	5,239	5,520	4,990	3,830	3,185

TABLE 5.02

PERSONS KILLED OR INJURED IN 1992 TRUCK CRASHES BY VEHICLE OCCUPIED

		Injured			
Vehicle Type	Killed	Severe	Moderate	Minor	Total
Automobile	64	125	298	511	934
Pickup Truck	11	35	67	93	195
Van	0	10	33	54	97
Motorhome/Camper	0	2	0	1	3
Police or Fire Department Vehicle	0	2	1	0	3
School Bus	0	0	1	2	3
Motorcycle	1	4	6	6	16
Motorscooter or Moped	0	0	1	0	1
Hit and Run Vehicle	0	1	1	2	4
Two-Axle, Six-Tire Single Unit Truck or Stepvan	0	10	32	72	114
Three or More Axle Single Unit Truck	3	3	22	47	72
Single Unit Truck with Trailer	0	4	14	23	41
Truck Tractor with No Trailer	0	1	3	10	14
Truck Tractor with Semi Trailer	2	13	66	101	180
Truck Tractor with Twin Trailers	0	0	1	2	3
Heavy Truck--Other or Unknown Type	0	0	2	2	4
Other or Unknown Vehicle Type	1	1	1	6	8
Bicycle	1	3	6	1	10
Pedestrian	1	8	5	6	19
Total	84	222	560	939	1,721

TABLE 5.03

CONTRIBUTING FACTORS IN 1992 TRUCK CRASHES

Contributing Factors	Attributed to Truck Vehicles Number	Attributed to Truck Vehicles Percent	Attributed to Non-Truck Vehicles Number	Attributed to Non-Truck Vehicles Percent
Human Factors				
Driver Inattention/Distraction	766	16.0%	648	16.6%
Failure to Yield Right of Way	504	10.5	722	18.5
Illegal/Unsafe Speed	482	10.0	514	13.2
Improper or Unsafe Lane Use	442	9.2	322	8.3
Following Too Closely	310	6.5	228	5.9
Improper Turn	294	6.1	98	2.5
Unsafe Backing	304	6.3	24	0.6
Vision Obscured	138	2.9	66	1.7
Disregard for Traffic Control Device	98	2.0	134	3.4
Improper Passing or Overtaking	104	2.2	218	5.6
Driver Inexperience	44	0.9	66	1.7
Physical Impairment	82	1.7	84	2.2
Improper Parking, Starting, or Stopping	90	1.9	88	2.3
Improper or No Signal	36	0.8	12	0.3
Driving Left of Center (Not Passing)	46	1.0	118	3.0
Impeding Traffic	8	0.2	24	0.6
Pedestrian Violation	0	0.0	30	0.8
Failure to Use Lights	2	0.1	10	0.3
Other Human Factors	54	1.1	18	0.5
Vehicular Factors				
Defective Brakes	100	2.1	10	0.3
Skidding	108	2.3	112	2.9
Oversize or Overweight Vehicle	34	0.7	0	0.0
Defective Tire	32	0.7	10	0.3
Defective Lights	34	0.7	12	0.3
Other Vehicular Factor	174	3.6	32	0.8
Miscellaneous Factors				
Weather	266	5.5	156	4.0
Other	248	5.2	138	3.5
Total Contributing Factors Cited	4,800	100.0%	3,894	100.0%
Vehicles for Which There Was "No Clear Contributing Factor"	1,895		1,729	
Total Number of Vehicles	4,632		3,992	

Zero, one, or two contributing factors may be associated with each vehicle. This may cause the sum of the factors cited to differ from the number of vehicles. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding. Bicyclists and pedestrians are included in the "non-truck vehicles" columns in this table. Contributing factors with a frequency of less than one-tenth of one percent are merged into the category "other human factors."

TABLE 5.04

AGE OF TRUCK DRIVERS IN 1992 CRASHES

Driver Age	Truck or Truck Tractor	Truck with Semi-Trailer	Truck with Twin Trailer	Truck with Other Trailer	Total
15 - 19	51	7	0	11	69
20 - 24	233	144	1	47	425
25 - 29	293	314	4	62	673
30 - 34	311	384	7	57	759
35 - 39	251	334	7	50	642
40 - 44	176	284	9	39	508
45 - 49	123	257	3	40	423
50 - 54	120	211	5	21	357
55 - 59	85	121	6	12	224
60 - 64	54	77	4	14	149
65 & Older	52	38	0	17	107
Not Stated	66	41	0	11	118
Total	1,815	2,212	46	381	4,454*

* There were 4,632 trucks in crashes in 1992. However, 148 of these were parked vehicles. The driver could not be identified for an additional 30 of these trucks. This table tabulates the ages of drivers for the remaining 4,454 trucks where it was possible to identify a driver.

TABLE 5.05

DRIVERS IN 1992 TRUCK CRASHES BY PHYSICAL CONDITION*

	Truck Driver		Other Driver	
Physical Condition	Number	Percent	Number	Percent
Normal	3,931	88.3%	3,109	83.7%
Under the Influence	8	0.2	73	2.0
Had Been Drinking	11	0.2	43	1.2
Had Been Using Drugs	0	0.0	4	0.1
Asleep	23	0.5	14	0.4
Fatigued	24	0.5	12	0.3
Ill	6	0.1	2	0.1
Other	5	0.1	12	0.3
Unknown	446	10.0	444	12.0
Total	4,454	100.0%	3,713**	100.0%

* As noted by police officer on accident report.
** There were 3,961 non-truck motor vehicles in 1991 truck crashes. However, 191 of them were parked vehicles, and there were 57 more for which a driver could not be identified, leaving 3,713 for which an apparent physical condition was recorded.

TABLE 5.06

1992 TRUCK CRASHES BY FIRST HARMFUL EVENT

First Harmful Event	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Collision With:						
Other Motor Vehicle	57	916	2,285	3,258	76	1,388
Parked Motor Vehicle	2	55	191	248	2	66
Railroad Train	1	2	5	8	1	2
Bicycle	1	7	0	8	1	7
Pedestrian	1	15	0	16	1	17
Deer	0	4	53	57	0	4
Other Animal	1	0	23	24	1	2
Fixed Object	0	53	306	359	0	60
Falling Object	0	9	36	45	0	9
Non-Collision:						
Overturn	2	125	116	243	2	139
Fire or Explosion	0	1	10	11	0	1
Other	0	26	160	186	0	26
Total	65	1,213	3,185	4,463	84	1,721

TABLE 5.07

1992 TRUCK CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
January	4	90	227	321	5	136
February	6	71	188	265	9	100
March	5	83	228	316	5	120
April	2	69	197	268	2	98
May	3	90	247	340	3	121
June	3	96	264	363	4	142
July	6	117	280	403	8	170
August	4	126	265	395	4	187
September	6	128	317	451	10	173
October	9	120	321	450	13	164
November	8	99	270	377	9	127
December	9	124	381	514	12	183
Total	65	1,213	3,185	4,463	84	1,721

TABLE 5.08

1992 TRUCK CRASHES BY TIME AND DAY

Time of Day	Total	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Midnight - 2:59 AM	109	7	13	20	15	13	21	20
3:00 - 5:59 AM	151	6	19	35	31	27	23	10
6:00 - 8:59 AM	710	8	171	140	145	109	101	36
9:00 - 11:59 AM	953	18	170	202	174	162	154	73
Noon - 2:59 PM	957	26	168	182	161	164	208	48
3:00 - 5:59 PM	897	29	155	156	193	163	162	39
6:00 - 8:59 PM	354	25	56	63	69	63	55	23
9:00 - 11:59 PM	245	28	37	40	34	45	46	15
Unknown	87	3	20	12	17	18	15	2
Total	4,463	150	809	850	839	764	785	266

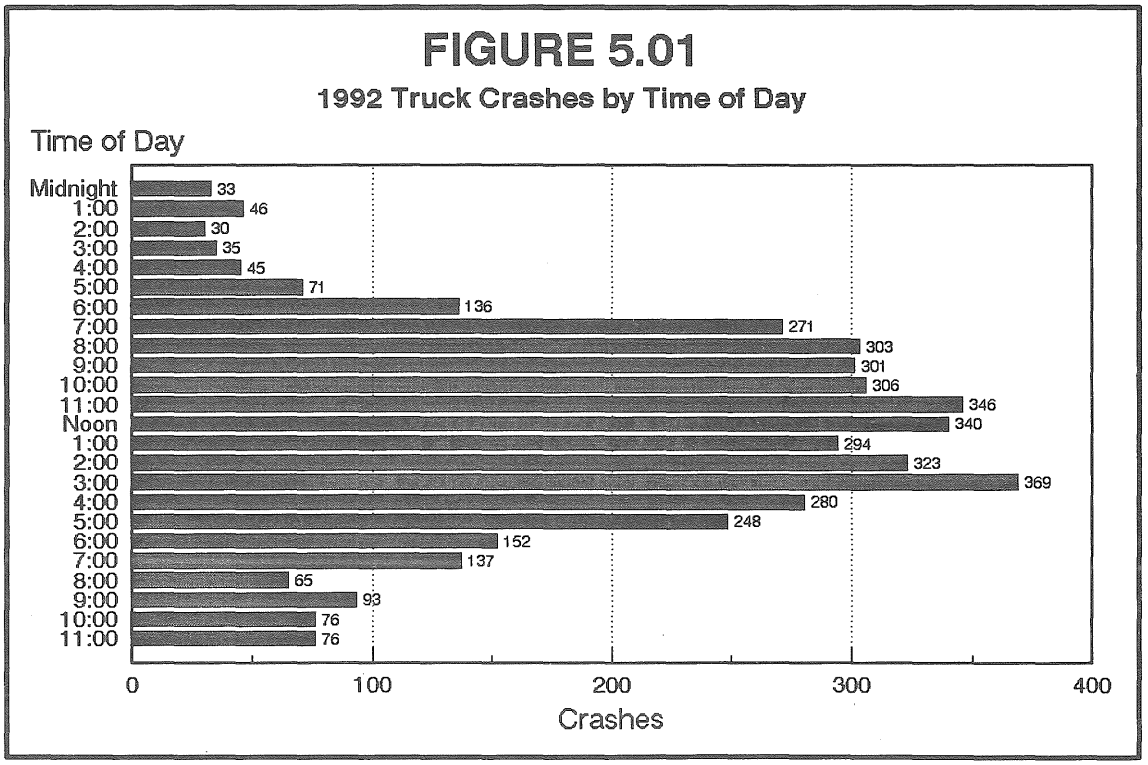


TABLE 5.09

1992 TRUCK CRASHES BY ROAD SURFACE CONDITION

Road Surface Condition	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Dry	45	813	2,082	2,940	54	1,154
Wet	8	205	463	676	12	286
Snow or Slush	4	66	176	246	5	102
Ice or Packed Snow	5	118	349	472	8	161
Other	2	7	23	32	3	9
Unknown	1	4	92	97	2	9
Total	65	1,213	3,185	4,463	84	1,721

TABLE 5.10

1992 TRUCK CRASHES BY WEATHER CONDITION

Weather Condition	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Clear	31	572	1,526	2,129	40	798
Cloudy	19	375	968	1,362	23	553
Rain	5	92	222	319	7	128
Snow	4	86	235	325	5	123
Sleet/Hail/Freezing Rain	1	33	80	114	1	45
Fog/Smog/Smoke	2	29	44	75	3	42
Blowing Sand/Dust/Snow	2	11	35	48	3	14
Severe Cross Winds	0	7	17	24	0	8
Other	0	0	6	6	0	0
Unknown	1	8	52	61	2	10
Total	65	1,213	3,185	4,463	84	1,721

TABLE 5.11

1992 TRUCK CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
100,000 & Over	3	151	590	744	5	205
50,000 - 99,999	0	60	184	244	0	79
25,000 - 49,999	1	162	429	592	1	225
10,000 - 24,999	4	144	468	616	4	203
5,000 - 9,999	5	92	284	381	6	124
2,500 - 4,999	3	48	125	176	3	69
1,000 - 2,499	3	39	117	159	7	51
Under 1,000	46	517	988	1,551	58	765
Total	65	1,213	3,185	4,463	84	1,721

TABLE 5.12

1992 TRUCK CRASHES BY TYPE OF ROADWAY

Roadway Type	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Interstate Highway	6	191	623	820	7	274
US Trunk Highway	23	271	531	825	32	402
State Trunk Highway	20	319	751	1,090	26	459
County State-Aid Highway	11	255	523	789	14	352
County Road	1	23	38	62	1	34
Township Road	2	18	47	67	2	26
Local Street	2	132	633	767	2	167
Other Road	0	4	39	43	0	7
Total	65	1,213	3,185	4,463	84	1,721

VI: PEDESTRIAN CRASHES

Crashes reported in this section deal with motor vehicle crashes that injure or kill pedestrians. Prior to 1984, a crash was defined as a pedestrian crash only if the pedestrian was the first "object" struck by a motor vehicle. Beginning in 1984, any crash where a pedestrian is struck and injured is defined as a pedestrian crash.

Crashes up from last year

There were 1,420 motor vehicle crashes that involved pedestrians in 1992. This is up from last year but is down from the average of the prior five years.

Fatalities hit record low

There were 46 pedestrian fatalities in 1992. This is the lowest number of pedestrian fatalities on record. There were also 1,424 pedestrians injured in these crashes. Injuries are up from last year but, like crashes, are down from the average of the prior five years.

Injuries to younger pedestrians

Of the 1,424 injuries sustained by pedestrians in 1992, 24% were severe, 35% were moderate, and 41% were minor. Half of the injuries were to persons under 25 years of age. The most injuries were sustained in the 5 to 9 year old age group, and the most fatalities in the 25 to 29 year old age group. Pedestrians aged 65 and older made up 26% of the fatalities but only 7% of the injuries.

Males made up more injuries

Males made up more of the injuries in every age group up to age 55. From age 65 on, females outnumbered males in numbers of pedestrian injuries. Fifty-eight percent of the injuries and 65% of the fatalities were male.

October had the most crashes

The month of October had the highest number of crashes (154) and injuries (150). February had the lowest number of crashes (82) and injuries (80). The month of August had the most fatalities (7).

Crashes in urban areas

Areas of over 100,000 population had nearly half of the crashes and injuries, but only 24% of the fatalities. Areas of under 1,000 population, on the other hand, had only 5% of the crashes and injuries but 15% of the fatalities.

Late afternoon/early evening most crashes

Almost half of the crashes (including fatal crashes) occurred between 3:00 PM and 9:00 PM. The hour from 4:00 to 5:00 PM was the single hour with the most crashes. There were many more pedestrian crashes between midnight and 3:00 AM on Saturday and Sunday mornings compared to this time period in the rest of the week. There was little variation in the number of crashes by day of the week. Friday had the most (252); Sunday had the least (146).

Vehicles going straight

Motor vehicles in pedestrian crashes were most likely to be going straight prior to the crash. This was true of 81% of the vehicles in fatal crashes and 61% of the vehicles in injury crashes. An additional 20% of the vehicles in injury crashes were turning; 6% of vehicles in fatal crashes were turning.

Pedestrians crossing street when hit

Almost one-third of the pedestrians killed and 28% of the pedestrians injured were crossing without a crosswalk before being struck. The next most common action for pedestrians who were killed was walking in road with traffic. Another 13% of those injured and 4% of those killed were crossing with the signal.

Drivers distracted

Nearly half of the contributing factors cited for motor vehicle drivers in pedestrian crashes were either driver inattention/distraction or failure to yield the right of way. Officers found no improper driving for 44% of the drivers in pedestrian crashes.

Drinking pedestrians over .10

Of the 46 pedestrians who were killed, 24 were tested for alcohol. Of those tested, 17 (71%) had not been drinking, 1 was between .01 and .09, and 6 (25%) were over .10. Four of the six pedestrians who were over .10 were killed between midnight and 3:00 AM.

TABLE 6.01

PEDESTRIAN CRASH SUMMARY, 1983 - 1992

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Pedestrian Crashes*	1,516	1,690	1,845	1,610	1,556	1,575	1,591	1,512	1,338	1,420
Pedestrians Killed	62	55	65	71	62	69	67	65	61	46
Pedestrians Injured	1,625	1,682	1,837	1,570	1,533	1,566	1,578	1,499	1,339	1,424

*Prior to 1984 a crash was defined as a pedestrian crash only if a pedestrian was the first "object" struck by a motor vehicle. Beginning in 1984, any crash where a pedestrian is struck and injured is defined as a pedestrian crash.

TABLE 6.02

PEDESTRIANS KILLED OR INJURED BY AGE AND GENDER, 1992

				Injured											
Age	Killed			Severe			Moderate			Minor			Total		
Group	M	F	Total	M	F	Total*	M	F	Total*	M	F	Total*	M	F	Total*
0 - 4	0	0	0	17	5	22	26	9	35	20	11	32	63	25	89
5 - 9	0	1	1	31	15	46	51	32	83	43	33	77	125	80	206
10 - 14	2	1	3	24	8	32	43	27	70	31	29	60	98	64	162
15 - 19	3	0	3	17	15	32	32	21	53	30	20	51	79	56	136
20 - 24	2	1	3	15	5	20	27	27	55	29	14	43	71	46	118
25 - 29	4	1	5	13	9	23	18	12	30	24	15	39	55	36	92
30 - 34	3	1	4	13	11	24	26	9	35	22	17	39	61	37	98
35 - 39	4	0	4	11	10	21	11	10	21	30	13	43	52	33	85
40 - 44	1	0	1	9	5	14	11	10	21	20	13	33	40	28	68
45 - 49	2	2	4	11	4	15	5	7	12	12	9	21	28	20	48
50 - 54	1	0	1	5	4	9	8	2	11	6	8	14	19	14	34
55 - 59	1	1	2	5	2	7	4	6	10	4	8	13	13	16	30
60 - 64	0	1	1	5	3	9	12	2	14	4	3	7	21	8	30
65 - 69	1	0	1	4	5	9	2	5	7	3	2	5	9	12	21
70 - 74	1	2	3	2	5	7	2	3	5	2	1	3	6	9	15
75 - 79	2	2	4	8	14	22	3	3	6	3	4	7	14	21	35
80 - 84	2	1	3	2	4	6	2	2	4	2	7	9	6	13	19
85 & Older	0	1	1	1	4	5	2	2	4	1	1	2	4	7	11
Not Stated	1	1	2	8	10	18	13	11	24	43	28	85	64	49	127
Total	30	16	46	201	138	341	298	200	500	329	236	583	828	574	1,424

* Where columns do not add across, gender was not stated on accident report.

FIGURE 6.01

Pedestrian Fatalities by Age
1983 - 1992 Combined

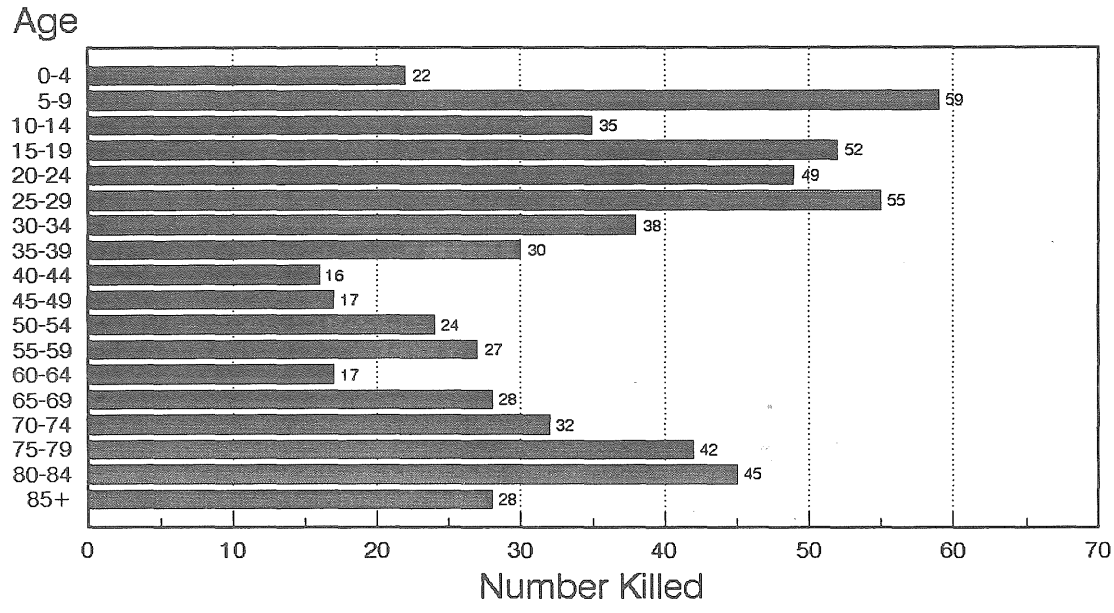


FIGURE 6.02

Pedestrians Killed and Injured
by Age and Gender, 1992

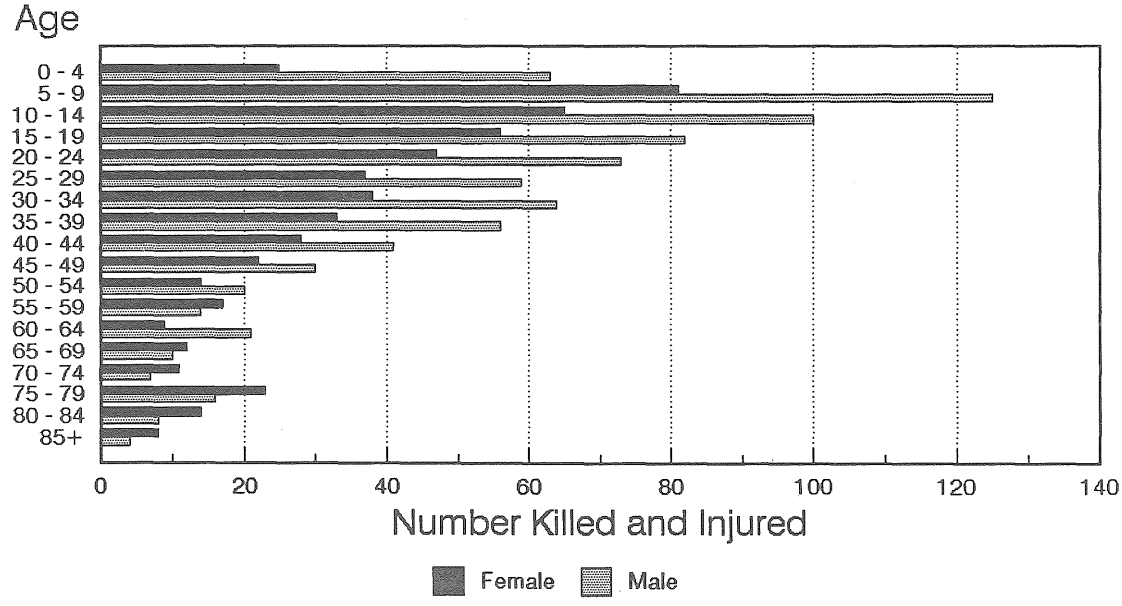


TABLE 6.03

1992 PEDESTRIAN CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Total Crashes	Pedestrians Killed	Pedestrians Injured
January	3	122	125	3	132
February	5	77	82	5	80
March	3	107	110	3	110
April	3	99	102	3	105
May	2	126	128	2	128
June	1	110	111	1	112
July	5	103	108	5	111
August	7	119	126	7	126
September	4	126	130	4	129
October	6	148	154	6	150
November	4	100	104	4	102
December	3	137	140	3	139
Total	46	1,374	1,420	46	1,424

TABLE 6.04

1992 PEDESTRIAN CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Injury Crashes	Total Crashes	Pedestrians Killed	Pedestrians Injured
100,000 and Over	11	677	688	11	702
50,000 - 99,999	2	75	77	2	78
25,000 - 49,999	7	158	165	7	165
10,000 - 24,999	8	168	176	8	172
5,000 - 9,999	4	79	83	4	82
2,500 - 4,999	3	33	36	3	35
1,000 - 2,499	3	23	26	3	23
Under 1,000	7	68	75	7	69
Unknown	1	93	94	1	98
Total	46	1,374	1,420	46	1,424

TABLE 6.05

1992 PEDESTRIAN CRASHES BY TIME AND DAY

Time of Day	Fatal Crashes	Total Crashes	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Midnight 2:59 AM	8	97	21	10	4	12	9	8	33
3:00 - 5:59 AM	1	13	6	1	2	1	1	0	2
6:00 - 8:59 AM	4	102	4	23	17	15	24	15	4
9:00 - 11:59 AM	1	151	12	16	20	27	11	26	39
Noon - 2:59 PM	3	200	28	26	27	34	25	33	27
3:00 - 5:59 PM	10	391	29	58	59	71	65	67	42
6:00 - 8:59 PM	12	273	32	43	28	41	42	44	43
9:00 - 11:59 PM	7	162	14	16	17	22	19	52	22
Unknown	0	31	0	2	3	5	7	7	7
Total	46	1,420	146	195	177	228	203	252	219

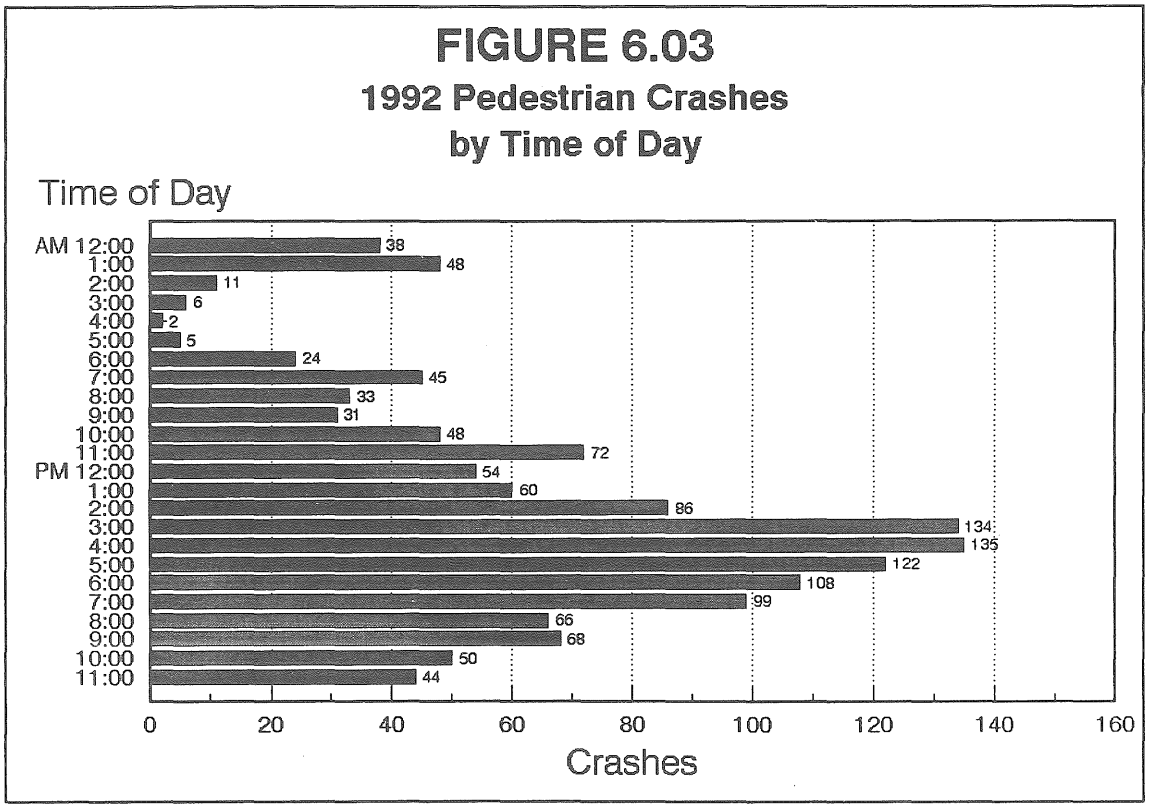


TABLE 6.06

PRIOR ACTION OF VEHICLES IN 1992 PEDESTRIAN CRASHES

Action	Vehicles in Fatal Crashes	Vehicles in Injury Crashes	Vehicles in Total Crashes*
Going Straight	43	874	917
Wrong Way Opposing Traffic	0	5	5
Turning Right on Red	0	21	21
Turning Left on Red	0	1	1
Turning Right	2	103	105
Turning Left	1	166	167
Making U Turn	0	4	4
Starting From Parked	0	18	18
Starting in Traffic	0	25	25
Slowing in Traffic	0	15	15
Parking	0	2	2
Avoiding Object in Road	4	19	23
Changing Lanes	0	15	15
Passing	0	9	9
Merging	0	2	2
Backing	0	49	49
All Others	3	67	70
Unknown	0	43	43
Total	53	1,438	1,491

* The number of vehicles in total crashes exceeds the number of crashes because some crashes involved more than one vehicle

TABLE 6.07

PRIOR ACTION OF PEDESTRIANS KILLED OR INJURED IN 1992

Action	Pedestrians Killed		Pedestrians Injured	
	Number	Percent	Number	Percent
Crossing Road (No Crosswalk and No Signal)	15	32.6%	396	27.8%
Crossing Against Signal	1	2.2	109	7.7
Crossing With Signal	2	4.3	187	13.1
Crossing In Crosswalk (No Signal)	6	13.0	109	7.7
Walking In Road With Traffic	8	17.4	99	7.0
Walking In Road Against Traffic	4	8.7	76	5.3
Standing In Road	2	4.3	90	6.3
Emerging From Front/Behind Parked Car	0	0.0	106	7.4
Child Getting On/Off School Bus	0	0.0	4	0.3
Pushing/Working On Vehicle	0	0.0	6	0.4
Working In Road	1	2.2	14	1.0
Getting On/Off Vehicle	0	0.0	19	1.3
Playing In Road	0	0.0	30	2.1
Not In Road	1	2.2	31	2.2
Other Pedestrian Action	2	4.3	139	9.8
Unknown	4	8.7	9	0.6
Total	46	100.0%	1,424	100.0%

* Percent totals may not sum to 100% due to rounding.

TABLE 6.08

CONTRIBUTING FACTORS IN 1992 PEDESTRIAN CRASHES

Contributing Factors	Attributed to Motor Vehicle Drivers Number	Percent
Human factors		
Driver Inattention/Distraction	281	25.2%
Failure to Yield Right of Way	263	23.6
Illegal or Unsafe Speed	78	7.0
Vision Obscured	77	6.9
Physical Impairment	45	4.0
Driver Inexperience	40	3.6
Disregard for Traffic Control Device	39	3.5
Improper/Unsafe Lane Use	35	3.1
Unsafe Backing	32	2.9
Improper Parking/Stopping/Starting	22	2.0
Improper Turn	19	1.7
Driving Left of Roadway Center - Not Passing	8	0.7
Improper Passing	7	0.6
Failure to Use Lights	6	0.5
Following Too Closely	3	0.3
Improper or No Signal	1	0.1
Other Human Factors	25	2.2
Vehicular Factors		
Skidding	20	1.8
Defective Equipment	5	0.4
Other Vehicular Factors	5	0.4
Miscellaneous Factors		
Weather Conditions	46	4.1
Other	57	5.1
Total Contributing Factors Cited	1,114	100.0%
No Improper Actions:	650	
Total Number of Drivers	1,491	

Zero, one, or two contributing factors may be attributed to a single driver. This may cause the sum of the factors cited to differ from the number of drivers. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding.

TABLE 6.09

PEDESTRIAN FATALITIES' LEVEL OF ALCOHOL CONCENTRATION, 1983 - 1992

Year	Killed	Tested	Alcohol Concentration* (.00)	(.01 - .09)	(.10 or more)
1983	62	38	17 (45%)	3 (8%)	18 (47%)
1984	55	38	18 (47%)	2 (5%)	18 (47%)
1985	65	37	22 (59%)	5 (14%)	10 (27%)
1986	71	49	21 (43%)	1 (2%)	27 (55%)
1987	62	42	23 (55%)	2 (5%)	17 (40%)
1988	69	47	25 (53%)	2 (4%)	20 (43%)
1989	67	42	26 (62%)	4 (10%)	12 (29%)
1990	65	41	25 (61%)	1 (2%)	15 (37%)
1991	61	32	20 (63%)	1 (3%)	11 (34%)
1992	46	24	17 (71%)	1 (4%)	6 (25%)

* The percentage figures shown are based on the number of fatally injured pedestrians who were tested for alcohol concentration. (The law requires testing of all drivers and pedestrians, 16 years of age or older, who die within four hours as a result of a motor vehicle crash.)

TABLE 6.10

1992 PEDESTRIAN FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY AGE

Age Group	Killed	Tested	Alcohol Concentration (.00)	(.01 - .09)	(.10 or more)
14 & Younger	4	2	2	0	0
15 - 19	3	0	0	0	0
20 - 24	3	1	0	0	1
25 - 29	5	3	2	0	1
30 - 34	4	3	2	0	1
35 - 39	4	3	1	0	2
40 - 44	1	1	1	0	0
45 - 49	4	2	1	1	0
50 - 54	1	1	0	0	1
55 - 59	2	0	0	0	0
60 - 64	1	1	1	0	0
65 - 69	1	1	1	0	0
70 - 74	3	2	2	0	0
75 - 79	4	2	2	0	0
80 - 84	3	1	1	0	0
85 & Older	1	0	0	0	0
Unknown	2	1	1	0	0
Total	46	24	17	1	6

TABLE 6.11

1992 PEDESTRIAN FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY TIME OF DAY

			Alcohol Concentration		
Time of Day	Killed	Tested	(.00)	(.01 - .09)	(.10 or more)
Midnight - 2:59 AM	8	5	1	0	4
3:00 - 5:59 AM	1	0	0	0	0
6:00 - 8:59 AM	4	3	2	0	1
9:00 - 11:59 AM	1	0	0	0	0
Noon - 2:59 PM	3	1	1	0	0
3:00 - 5:59 PM	10	6	6	0	0
6:00 - 8:59 PM	12	6	5	0	1
9:00 - 11:59 PM	7	3	2	1	0
Total	46	24	17	1	6

VII: BICYCLE CRASHES

Bicycles are subject to the same traffic laws as motor vehicles, but bicycle crashes are only reported to the Minnesota Department of Public Safety if they involve collision with a motor vehicle.

Data collected before 1984 counted bicycles only if they were the first "object" struck by the motor vehicle. Beginning in 1984, all motor vehicle crashes that involved collision with a bicycle were reported as bicycle crashes. The number of bicycle crashes reported here rose slightly as a result.

Crashes up from 1991

There were 1,343 crashes that involved a motor vehicle and a bicycle in 1992. This is up 11% from last year, but is still below the prior five year average. There were 11 bicyclists killed and 1,249 bicyclists injured in these crashes.

Crashes highest in summer months

The months of June, July, and August (combined) accounted for 54% of the crashes, 54% of the injuries, and 73% of the fatalities. February had the least crashes (5); July had the most (259).

Afternoon hours most crash involved

One-third of the crashes occurred between 3:00 PM and 6:00 PM. The single hour with the most crashes was 5:00 - 6:00 PM. Almost three-fourths of the crashes occurred between noon and 9:00 PM.

Crashes urban; fatalities rural

Areas of over 100,000 population accounted for just under 40% of the crashes and injuries, but only one of the fatalities. Areas of under 1,000 population, on the other hand, accounted for 4% of the crashes and injuries, but 4 of the 11 fatalities.

Fatalities between 10 and 14 years old

Nine of the 11 fatalities were between the ages of 10 and 14. Eight were male and three were female. Almost a quarter of the injuries were 10 to 14 year old males. Three-fourths of those injured were males; 25% were females.

Bicyclists hit crossing road

Thirty-five percent of the bicyclists involved in collisions with motor vehicles were crossing the road when hit. Bicyclists are required to ride with traffic, so it is not surprising that 27% were riding with traffic when struck. Another 11% were illegally riding against traffic.

Driver inattention and failure to yield the right of way contribute to crashes

Driver inattention/distraction and failure to yield were two of the top contributing factors cited by officers. For bicyclists, driver inexperience was the contributing factor cited most often, followed by driver inattention/ distraction, and then failure to yield the right of way. For motor vehicle drivers, the top two factors were driver inattention/distraction and failure to yield the right of way. The officers showed no improper driving for 47% of the motor vehicle drivers but only 22% of the bicyclists.

TABLE 7.01

BICYCLE CRASH SUMMARY, 1983 - 1992

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Bicycle Crashes	1,220	1,282	1,375	1,367	1,574	1,448	1,392	1,357	1,208	1,343
Bicyclists Killed	14	15	10	12	15	16	10	8	8	11
Bicyclists Injured	1,194	1,258	1,342	1,309	1,452	1,401	1,353	1,327	1,157	1,249

TABLE 7.02

1992 BICYCLE CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Bicyclists Killed	Bicyclists Injured
January	0	11	0	11	0	11
February	0	5	0	5	0	5
March	0	32	2	34	0	32
April	1	69	5	75	1	71
May	1	177	10	188	1	179
June	3	222	14	239	3	227
July	2	237	20	259	2	242
August	3	208	22	233	3	210
September	1	155	12	168	1	154
October	0	87	4	91	0	86
November	0	27	4	31	0	27
December	0	5	4	9	0	5
Total	11	1,235	97	1,343	11	1,249

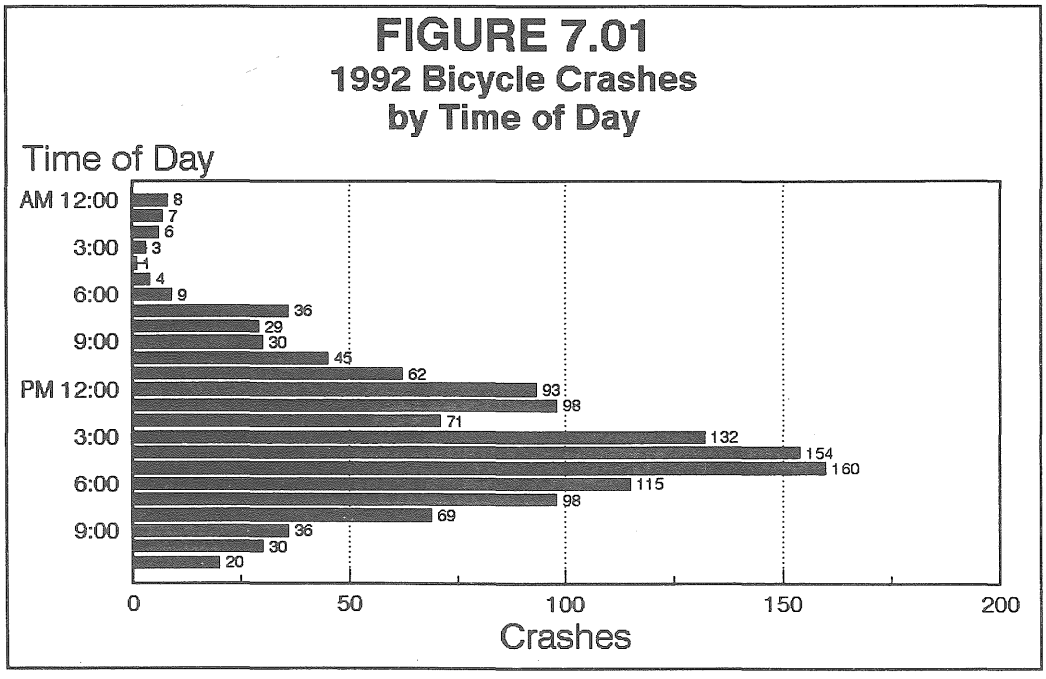


TABLE 7.03

1992 BICYCLE CRASHES BY TIME AND DAY

Time of Day	Total	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Midnight - 2:59 AM	21	3	3	0	2	3	2	8
3:00 - 5:59 AM	8	0	1	0	3	0	4	0
6:00 - 8:59 AM	74	2	13	14	10	18	15	2
9:00 - 11:59 AM	137	9	18	31	24	10	21	24
Noon - 2:59 PM	262	35	38	37	39	44	36	33
3:00 - 5:59 PM	446	30	63	81	70	93	68	41
6:00 - 8:59 PM	282	34	46	47	43	41	39	32
9:00 - 11:59 PM	86	7	6	12	11	20	15	15
Unknown	27	5	3	3	5	3	7	1
Total	1,343	125	191	225	207	232	207	156

TABLE 7.04

1992 BICYCLE CRASHES BY POPULATION OF AREA

Population of City or Township	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Bicyclists Killed	Bicyclists Injured
100,000 and Over	1	468	54	523	1	478
50,000 - 99,999	1	69	2	72	1	69
25,000 - 49,999	1	257	11	269	1	259
10,000 - 24,999	2	182	13	197	2	185
5,000 - 9,999	0	73	7	80	0	73
2,500 - 4,999	0	28	0	28	0	28
1,000 - 2,499	2	25	2	29	2	25
Under 1,000	4	53	2	59	4	50
Unknown	0	80	6	86	0	82
Total	11	1,235	97	1,343	11	1,249

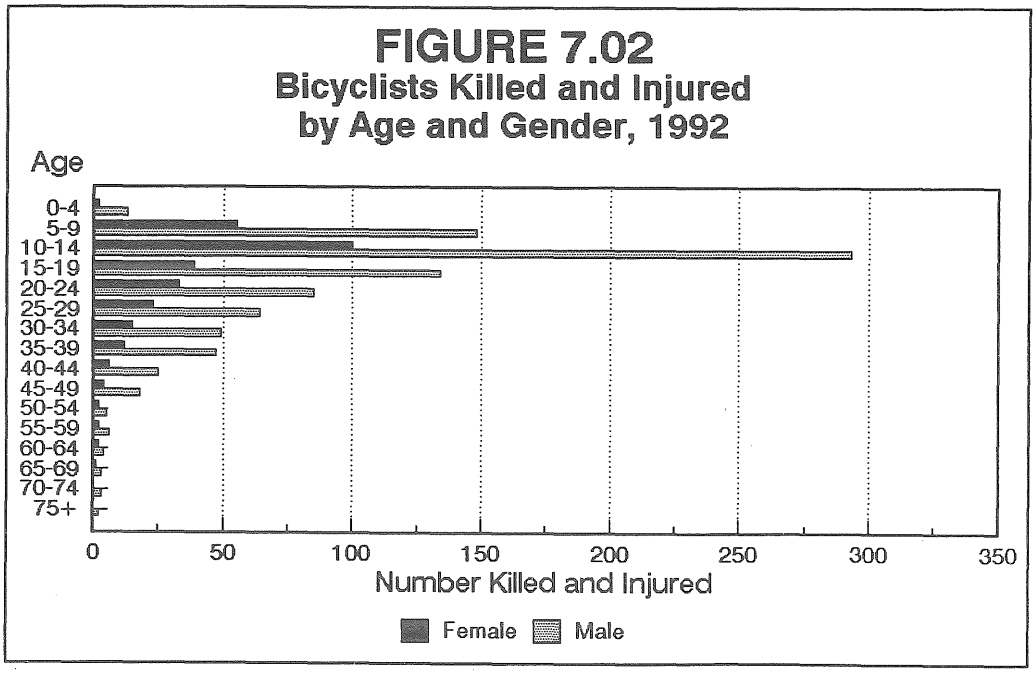


TABLE 7.05

BICYCLISTS KILLED OR INJURED BY AGE AND GENDER, 1992

	Killed			Injured											
				Severe			Moderate			Minor			Total		
Age Group	M	F	Total	M	F	Total	M	F	Total	M	F	Total*	M	F	Total*
0 - 4	0	0	0	1	1	2	7	0	7	5	1	6	13	2	15
5 - 9	0	0	0	25	6	31	71	28	99	52	21	73	148	55	203
10 - 14	7	2	9	39	14	53	143	47	190	104	37	144	286	98	387
15 - 19	0	0	0	14	3	17	72	23	95	48	13	61	134	39	173
20 - 24	0	0	0	8	7	15	44	16	60	33	10	43	85	33	118
25 - 29	1	0	1	10	4	14	28	10	38	25	9	34	63	23	86
30 - 34	0	0	0	7	1	8	17	4	21	25	10	36	49	15	65
35 - 39	0	0	0	11	2	13	15	6	21	21	4	25	47	12	59
40 - 44	0	0	0	7	1	8	13	2	15	5	3	8	25	6	31
45 - 49	0	0	0	3	0	3	9	3	12	6	1	7	18	4	22
50 - 54	0	0	0	2	0	2	1	2	3	2	0	2	5	2	7
55 - 59	0	0	0	1	1	2	4	1	5	1	0	2	6	2	9
60 - 64	0	0	0	0	0	0	4	1	5	0	1	1	4	2	6
65 - 69	0	1	1	0	0	0	2	0	2	1	0	1	3	0	3
70 - 74	0	0	0	1	0	1	2	0	2	0	0	0	3	0	3
75 & Older	0	0	0	0	0	0	1	0	1	1	0	1	2	0	2
Not Stated	0	0	0	2	6	8	17	6	23	19	7	29	38	19	60
Total	8	3	11	131	46	177	450	149	599	348	117	473	929	312	1,249

* Where columns do not add across to total, gender was not stated on the accident report.

TABLE 7.06

PRIOR ACTION OF BICYCLISTS INVOLVED IN 1992 CRASHES

Prior Action	Bicyclists In Fatal Crashes	Bicyclists In Injury Crashes	Bicyclists In Property Damage Crashes	Bicyclists In All Crashes*
Riding With Traffic	3	333	33	369
Riding Against Traffic	1	135	9	145
Making Left Turn	2	48	4	54
Making Right Turn	0	10	0	10
Making U Turn	0	14	0	14
Riding Across Road	3	449	22	474
Slowing, Starting, Stopping	1	27	1	29
Other/Unknown	1	239	29	269
Total	11	1,255	98	1,364

* The total number of bicyclist actions exceeds the number of bicycle crashes because some crashes involved more than one bicycle.

TABLE 7.07

CONTRIBUTING FACTORS IN 1992 BICYCLE CRASHES

Contributing Factors	Attributed to Bicyclists Number	Attributed to Bicyclists Percent	Attributed to Motor Vehicle Drivers Number	Attributed to Motor Vehicle Drivers Percent
Human Factors				
Driver Inexperience	282	17.0%	19	2.1%
Driver Inattention/Distraction	223	13.5	290	31.7
Failure to Yield Right of Way	205	12.4	258	28.2
Improper/Unsafe Lane Use	99	6.0	29	3.2
Disregard for Traffic Control Device	88	5.3	27	2.9
Vision Obscured	45	2.7	100	10.9
Illegal/Unsafe Speed	26	1.6	37	4.0
Improper Turn	20	1.2	25	2.7
Driving Left of Roadway Center--Not Passing	18	1.1	5	0.5
Failure to Use Lights	19	1.1	1	0.1
Physical Impairment	13	0.8	12	1.3
Improper Parking/ Starting/Stopping	8	0.5	18	2.0
Improper Passing/Overtaking	4	0.2	11	1.2
Impeding Traffic	3	0.2	3	0.3
Following Too Closely	1	0.1	10	1.1
Improper or No Signal	2	0.1	3	0.3
Using Phone/CB/Radio	1	0.1	1	0.1
Unsafe Backing	0	0.0	7	0.8
Other Human Factors	15	0.9	12	1.3
Vehicular Factors				
Defective Equipment	33	2.0	2	0.2
Skidding	4	0.2	5	0.5
Other Vehicular Factors	4	0.2	1	0.1
Miscellaneous Factors				
Weather Conditions	13	0.8	10	1.1
Other	531	32.0	30	3.3
Total	1,657	100.0%	916	100.0%
No Improper Driving	302		642	
Total Number of Bicyclists/Drivers	1,364		1,358	

Zero, one, or two contributing factors may be attributed to a single driver or bicyclist. This may cause the sum of the factors cited to differ from the number of drivers or bicyclists. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding.

VIII: SCHOOL BUS CRASHES

School bus travel remains remarkably safe in Minnesota. For the past ten years, the number of fatalities in school bus crashes has ranged from 1 to 8 per year. Nearly 80% of the school bus crashes in 1992 involved no injuries. However, because school buses may carry many passengers, a small number of crashes may involve a large number of injuries.

Crashes down from last year

There were 741 crashes that involved a school bus in 1992. This is a 14% decrease from 1991 but is still higher than the average of the prior five years. There was one fatal crash, 169 crashes that involved non-fatal injuries, and 571 crashes that were property damage only.

Only one fatality in 1992

There was only one fatality in 1992. The person who died was not a school bus occupant, but was instead the driver of a vehicle that went out of control and then broadsided the school bus. There has only been one other year since 1965 where there was only one school bus-related fatality and that was 1980. There were 425 injuries in school bus crashes.

Crashes revolved around school day

The hours from 6:00 AM to 9:00 AM and 3:00 PM to 6:00 PM were most crash involved. These two time periods accounted for more than 60% of the crashes and injuries.

Few crashes in summer months

The months of June, July, and August (combined) accounted for only 5% of the crashes, and 3% of the injuries in school bus crashes. January and December each had 15% of the crashes and 14% of the injuries.

Few pedestrians injured

Of the injuries sustained in school bus crashes, only 1% involved pedestrians. Injuries were divided between passengers in the school bus (57%) and other vehicles (41%).

Half of those injured were under 20

Just under half of the injured persons in 1992 were under the age of 20. However, for 20% of the injuries, the age was unknown and it is believed that the majority of these were students on the school bus who sustained minor injuries. Of those on the bus, the 10 to 14 year old age group was most often injured. For those in other vehicles, the 15 to 19 year old age group was most often injured.

Most injuries minor

Of the injuries in school bus crashes, 65% were minor, 28% were moderate, and only 7% were severe.

Most injuries in urban areas

Almost 70% of the injuries sustained in school bus crashes occurred in areas of population of 5,000 or more. However, 26% occurred in areas of population of under 1,000.

Crashes involved more than one vehicle

Most crashes (84%) involved a collision with another motor vehicle. Only 1% involved collision with a pedestrian.

Few crashes at extended school bus arm

Only 2% of the crashes and only 4 injuries occurred where a school bus stop arm was the traffic control device. Over half of the injuries and 38% of the crashes occurred where there was no traffic control device present.

Driver inattention/distraction top factor

The contributing factor cited most often in school bus crashes for both the school bus driver and the other drivers was driver inattention/distraction. The next most frequent factor was failure to yield the right of way. School bus drivers were found to have committed no improper driving in 48% of the cases; this was true of 37% of the other drivers.

TABLE 8.01

SCHOOL BUS CRASH SUMMARY, 1983 - 1992

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total Crashes	687	675	723	662	530	679	828	674	857	741
Fatal Crashes	7	3	4	3	6	3	4	5	4	1
Persons Killed	8	3	4	3	6	3	4	6	4	1
Injury Crashes	161	176	191	160	141	175	167	149	181	169
Persons Injured	321	340	366	265	244	359	281	329	383	425
Property Damage Crashes	519	496	528	499	383	501	657	520	672	571
School Buses Involved	694	686	729	667	534	684	834	680	867	756

TABLE 8.02

1992 SCHOOL BUS CRASHES BY TIME OF DAY

Time of Day	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Midnight - 2:59 AM	0	1	2	3	0	1
3:00 - 5:59 AM	0	0	1	1	0	0
6:00 - 8:59 AM	0	44	184	228	0	120
9:00 - 11:59 AM	0	21	70	91	0	66
Noon - 2:59 PM	0	29	118	147	0	40
3:00 - 5:59 PM	1	63	158	222	1	138
6:00 - 8:59 PM	0	4	12	16	0	18
9:00 - 11:59 PM	0	3	7	10	0	35
Unknown	0	4	19	23	0	7
Total	1	169	571	741	1	425

TABLE 8.03

1992 SCHOOL BUS CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
January	1	15	92	108	1	60
February	0	11	72	83	0	18
March	0	22	59	81	0	30
April	0	17	33	50	0	93
May	0	15	61	76	0	25
June	0	5	15	20	0	6
July	0	2	6	8	0	2
August	0	1	9	10	0	3
September	0	18	37	55	0	38
October	0	17	44	61	0	62
November	0	18	59	77	0	29
December	0	28	84	112	0	59
Total	1	169	571	741	1	425

TABLE 8.04

AGE AND GENDER OF PERSONS INJURED IN 1992 SCHOOL BUS CRASHES

Age Group	Total*	In Bus	Pedestrian	In Other Vehicle	Male	Female
0 - 4	7	1	0	6	1	6
5 - 9	47	43	1	3	19	26
10 - 14	71	62	1	8	27	44
15 - 19	78	35	2	41	25	52
20 - 24	29	2	0	27	15	14
25 - 29	19	3	0	16	10	9
30 - 34	13	2	0	11	9	4
35 - 39	13	7	0	6	4	9
40 - 44	17	4	0	13	7	10
45 - 54	24	8	0	16	13	11
55 - 64	9	1	1	7	3	6
65 & Older	12	1	0	11	8	4
Unknown	86	75	1	10	45	36
Total	425	244	6	175	186	231

* There were 8 cases where the gender of the person was not stated.

TABLE 8.05

PERSONS KILLED OR INJURED IN 1992 SCHOOL BUS CRASHES BY POPULATION OF AREA

Population of City or Township	Killed	Injured			
		Severe	Moderate	Minor	Total
100,000 and Over	0	9	31	90	130
50,000 - 99,999	0	1	6	6	13
25,000 - 49,999	0	4	3	25	32
10,000 - 24,999	0	2	19	68	89
5,000 - 9,999	0	3	6	20	29
2,500 - 4,999	0	0	2	2	4
1,000 - 2,499	0	0	3	2	5
Under 1,000	1	9	45	58	112
Unknown	0	2	2	7	11
Total	1	30	117	278	425

TABLE 8.06

1992 SCHOOL BUS CRASHES BY FIRST HARMFUL EVENT

First Harmful Event	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Collision With:						
Other Motor Vehicle	1	140	481	622	1	370
Parked Motor Vehicle	0	4	69	73	0	7
Bicycle	0	6	0	6	0	11
Pedestrian	0	8	0	8	0	8
Deer	0	0	1	1	0	0
Other Animal	0	0	2	2	0	0
Fixed Object	0	7	8	15	0	24
Falling Object	0	0	1	1	0	0
Non-collision:						
Overturn	0	1	4	5	0	1
Other	0	3	5	8	0	4
Total	1	169	571	741	1	425

TABLE 8.07

1992 SCHOOL BUS CRASHES BY TRAFFIC CONTROL DEVICE

Traffic Control Device	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
Not Applicable	1	73	210	284	1	221
Traffic Signal	0	32	118	150	0	59
Overhead Flashers	0	1	12	13	0	1
Stop Sign--All Approaches	0	5	20	25	0	6
Other Stop Sign	0	44	126	170	0	104
Yield Sign	0	6	17	23	0	13
Officer/Flagperson/ School Patrol	0	0	1	1	0	0
School Bus Stop Arm	0	4	13	17	0	4
School Sign Zone	0	0	3	3	0	0
No Passing Zone	0	0	1	1	0	0
Railroad Crossing Device	0	0	7	7	0	0
Other	0	2	10	12	0	15
Unknown	0	2	33	35	0	2
Total	1	169	571	741	1	425

TABLE 8.08

CONTRIBUTING FACTORS IN 1992 SCHOOL BUS CRASHES

Contributing Factors	Attributed to School Bus Drivers Number	Percent	Attributed to Drivers of Other Vehicles Number	Percent
Human Factors				
Driver Inattention/Distraction	90	20.6%	120	19.6%
Failure to Yield Right of Way	74	16.9	82	13.4
Unsafe Backing	33	7.6	7	1.1
Illegal or Unsafe Speed	31	7.1	72	11.7
Following Too Closely	28	6.4	57	9.3
Improper Turn	27	6.2	11	1.8
Improper or Unsafe Lane Use	17	3.9	29	4.7
Vision Obscured	17	3.9	12	2.0
Disregard for Traffic Control Device	10	2.3	25	4.1
Improper Parking/Starting/ Stopping	10	2.3	13	2.1
Driver Inexperience	9	2.1	26	4.2
Improper Passing/Overtaking	5	1.1	16	2.6
Driving Left of Roadway Center--Not Passing	4	0.9	11	1.8
Improper or No Signal	3	0.7	2	0.3
Physical Impairment	1	0.2	1	0.2
Impeding Traffic	1	0.2	2	0.3
Pedestrian Violation	0	0.0	10	1.6
Other Human Factors	3	0.7	3	0.5
Vehicular Factors				
Skidding	23	5.3	49	8.0
Defective Equipment	2	0.5	10	1.6
Other Vehicular Factors	3	0.7	2	0.3
Miscellaneous Factors				
Weather Conditions	34	7.8	46	7.5
Other	12	2.7	7	1.1
Total	437	100.0%	613	100.0%
No Improper Driving	364		295	
Total Number of Drivers	756		787	

Zero, one, or two contributing factors may be attributed to a single driver. This may cause the sum of the factors cited to differ from the number of drivers. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding. Bicyclists and pedestrians are included as other drivers in this table.

IX: MOTOR VEHICLE/TRAIN CRASHES

Crashes reported in this section involve a motor vehicle and a train. Train collisions with pedestrians or bicyclists are not counted as traffic crashes for the purpose of this publication. Motor vehicle/train crashes are few in number but are more likely to be fatal; about one-half of 1% of all crashes statewide were fatal, but 6% of motor vehicle/train crashes were fatal in 1992.

Crashes lowest in 30 years

A new low was reached in the number of motor vehicle/train crashes in 1992. There were 111 crashes, 9 fatalities, and 54 injuries in these crashes.

All crash severities decrease

Crashes were down 20% from the average of the prior five years. This decrease was seen in fatal crashes, injury crashes, and property damage crashes.

Majority of crashes are property damage

Of the 111 crashes in 1992, 59% were property damage only, 35% involved injuries but no fatalities, and 6% involved a fatality.

December highest month

December had the highest number of crashes with 15. July and November tied for most fatalities with 3 each. March had the most injuries with 9.

Monday most crash-involved

Of the days of the week, Monday had the most crashes (24), and Sunday the least (4). The remaining days of the week were roughly equal to each other.

9:00 - noon most crash-involved

The hours from 9:00 AM to noon accounted for 20% of the crashes. There were only 4 crashes between 3:00 AM and 6:00 AM.

Most crashes at marked crossing

According to the investigating officer at the scene of the crash, at least 86% of the crashes, and over 90% of the injuries and fatalities, occurred where there was a railroad crossing sign or stop sign.

15 to 29 most injured

More than half the fatalities and 46% of the injuries in 1992 motor vehicle/train crashes were to persons aged 15 to 29. No one under 15 was killed and only one injury was to someone under 15 years old. Unlike crashes as a whole, motor vehicle/train crashes produce more severe injuries: 44% of the injuries were severe, 22% moderate and 33% minor. For all crashes, 10% of injuries were severe, 34% were moderate, and 56% were minor.

Drivers not paying attention

The factor cited most often by officers investigating motor vehicle/train crashes is driver inattention/distraction. Drivers are next most likely to have failed to yield the right of way, or disregarded the traffic control device. These three factors accounted for 60% of all contributing factors cited by officers. Only 9% of drivers were found to have committed no improper driving.

TABLE 9.01

MOTOR VEHICLE/TRAIN CRASH SUMMARY, 1983 - 1992

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total Crashes	174	149	134	116	119	168	142	116	147	111
Fatal Crashes	11	7	8	5	4	9	11	13	10	7
Persons Killed	15	11	13	12	4	12	15	17	10	9
Injury Crashes	69	56	63	53	55	56	48	35	49	39
Persons Injured	85	73	87	66	74	70	75	67	70	54
Property Damage Crashes	94	86	63	58	60	103	83	68	88	65

TABLE 9.02

1992 MOTOR VEHICLE/TRAIN CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
January	0	4	4	8	0	7
February	0	2	11	13	0	2
March	0	6	5	11	0	9
April	0	1	5	6	0	1
May	1	2	6	9	1	4
June	0	2	5	7	0	2
July	2	3	5	10	3	4
August	1	1	3	5	1	3
September	0	7	5	12	0	7
October	0	2	6	8	0	3
November	2	3	2	7	3	4
December	1	6	8	15	1	8
Total	7	39	65	111	9	54

TABLE 9.03

1992 MOTOR VEHICLE/TRAIN CRASHES BY TIME AND DAY

Time of Day	Total	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Midnight - 2:59 AM	12	1	3	1	0	1	1	5
3:00 - 5:59 AM	4	0	0	0	0	2	1	1
6:00 - 8:59 AM	16	1	1	5	4	3	1	1
9:00 - 11:59 AM	22	1	5	2	4	2	6	2
Noon - 2:59 PM	11	0	5	1	2	1	1	1
3:00 - 5:59 PM	17	0	4	3	3	3	4	0
6:00 - 8:59 PM	14	0	1	2	4	3	1	3
9:00 - 11:59 PM	15	1	5	3	2	2	2	0
Total	111	4	24	17	19	17	17	13

TABLE 9.04

1992 MOTOR VEHICLE/TRAIN CRASHES BY TRAFFIC CONTROL DEVICE

Traffic Control Device	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Killed	Injured
RR Crossbuck	1	18	17	36	1	25
RR Crossing Stop Sign	2	4	12	18	3	6
RR Flashing Lights	2	7	5	14	3	9
RR Overhead Flashers Plus Gate	1	1	4	6	1	3
RR Overhead Flashers	0	2	2	4	0	2
RR Crossing Gate	0	1	6	7	0	1
Stop Sign	1	3	6	10	1	5
Other	0	1	3	4	0	1
Not Applicable	0	2	10	12	0	2
Total	7	39	65	111	9	54

TABLE 9.05

AGE OF PERSONS KILLED OR INJURED IN 1992 MOTOR VEHICLE/TRAIN CRASHES

		Injured			
Age Group	Killed	Severe	Moderate	Minor	Total
0-4	0	0	0	0	0
5-9	0	0	1	0	1
10-14	0	0	0	0	0
15-19	1	6	3	6	15
20-24	3	1	0	5	6
25-29	1	3	0	1	4
30-34	1	1	2	1	4
35-39	0	2	3	0	5
40-44	0	1	1	0	2
45-49	1	1	0	1	2
50-54	1	4	1	1	6
55-59	0	2	0	2	4
60-69	0	1	0	0	1
70-79	0	1	0	0	1
80 & Older	0	0	0	1	1
Not Stated	1	1	1	0	2
Total	9	24	12	18	54

TABLE 9.06

CONTRIBUTING FACTORS IN 1992 MOTOR VEHICLE/TRAIN CRASHES

Contributing Factor	Number	Percent
Human Factors		
Driver Inattention/Distraction	31	23.3%
Failure to Yield Right of Way	27	20.3
Disregard for Traffic Control Device	22	16.5
Illegal or Unsafe Speed	10	7.5
Vision Obscured	7	5.3
Physical Impairment	6	4.5
Improper Parking/Starting/Stopping	4	3.0
Driver Inexperience	1	0.8
Improper Turn	1	0.8
Improper Lane Use	1	0.8
Other Human Factor	1	0.8
Vehicular Factors		
Skidding	11	8.3
Miscellaneous Factors		
Weather Conditions	6	4.5
Other	5	3.8
Total	133	100.0%
No Improper Driving	10	
Number of Drivers	115	

Zero, one or two contributing factors may be attributed to a single driver. This may cause the sum of the factors cited to differ from the number of drivers. Percentages are based on all contributing factors cited. They may not sum to 100 due to rounding. No contributing factors are cited for train operators.

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