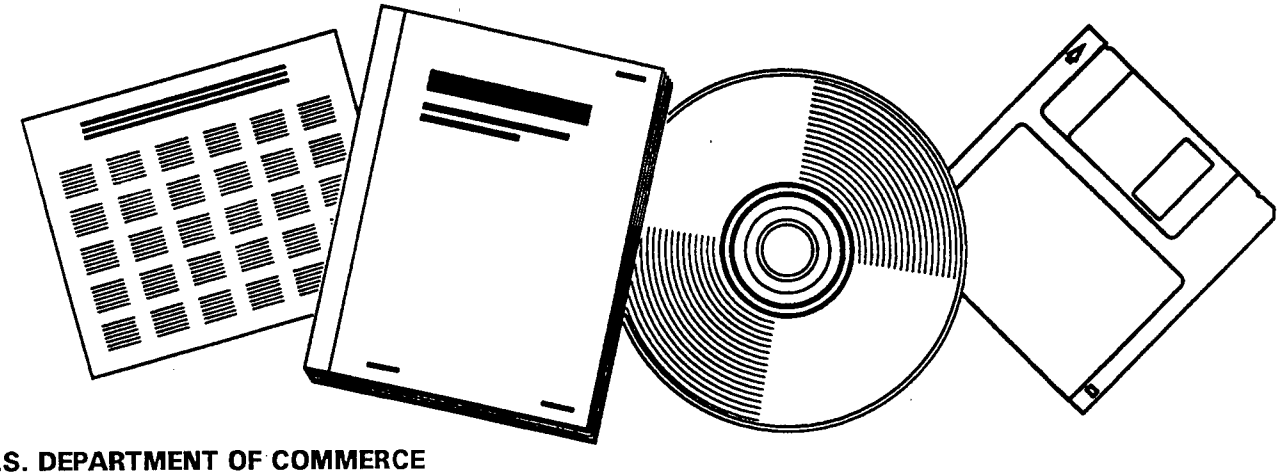
PB98-109671

PEDESTRIAN CRASH TYPES: A 1990'S INFORMATIONAL GUIDE

APR 97



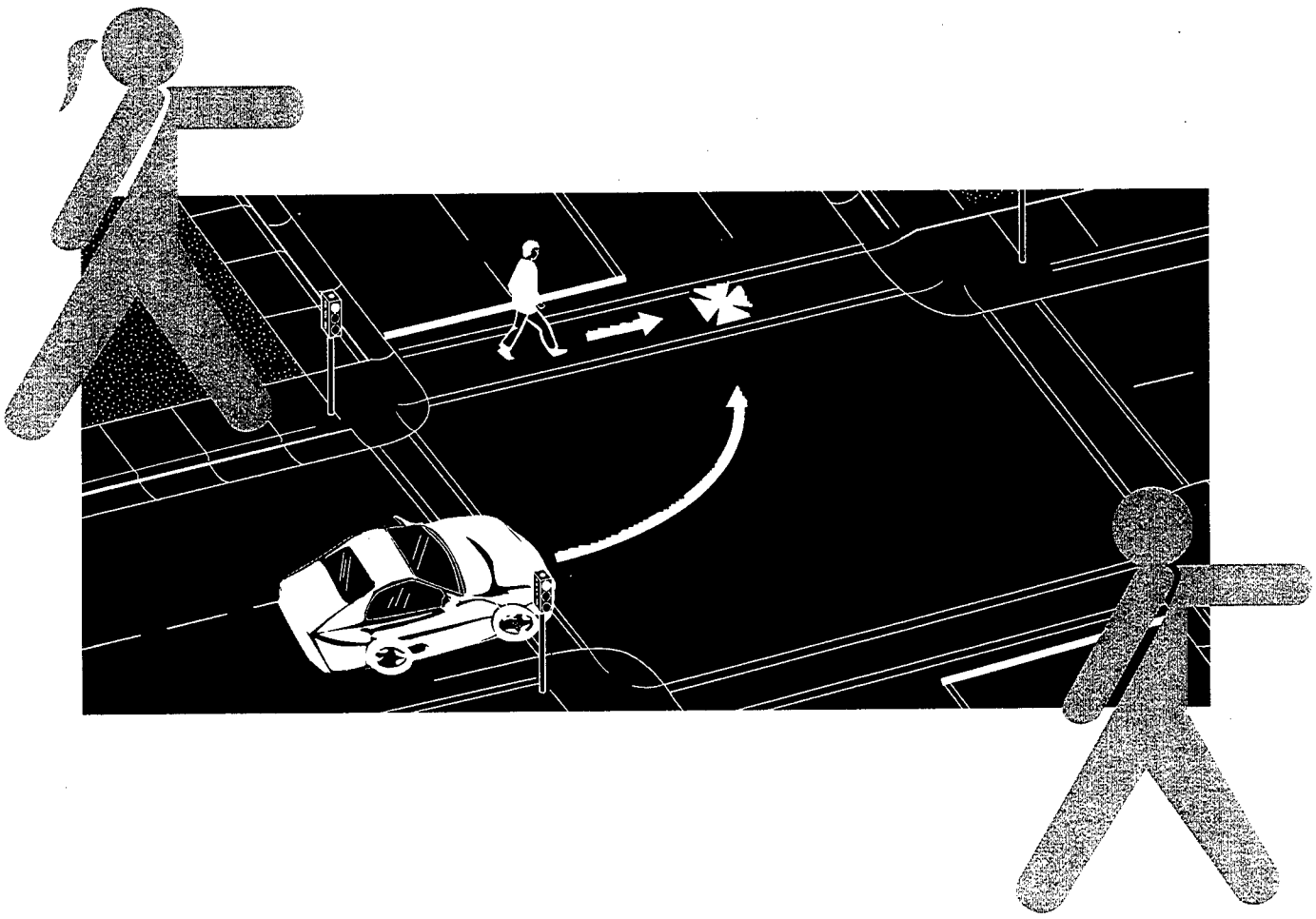
U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

Pedestrian Crash Types:

A 1990's Informational Guide

PUBLICATION NO. FHWA-RD-96-163

APRIL 1997



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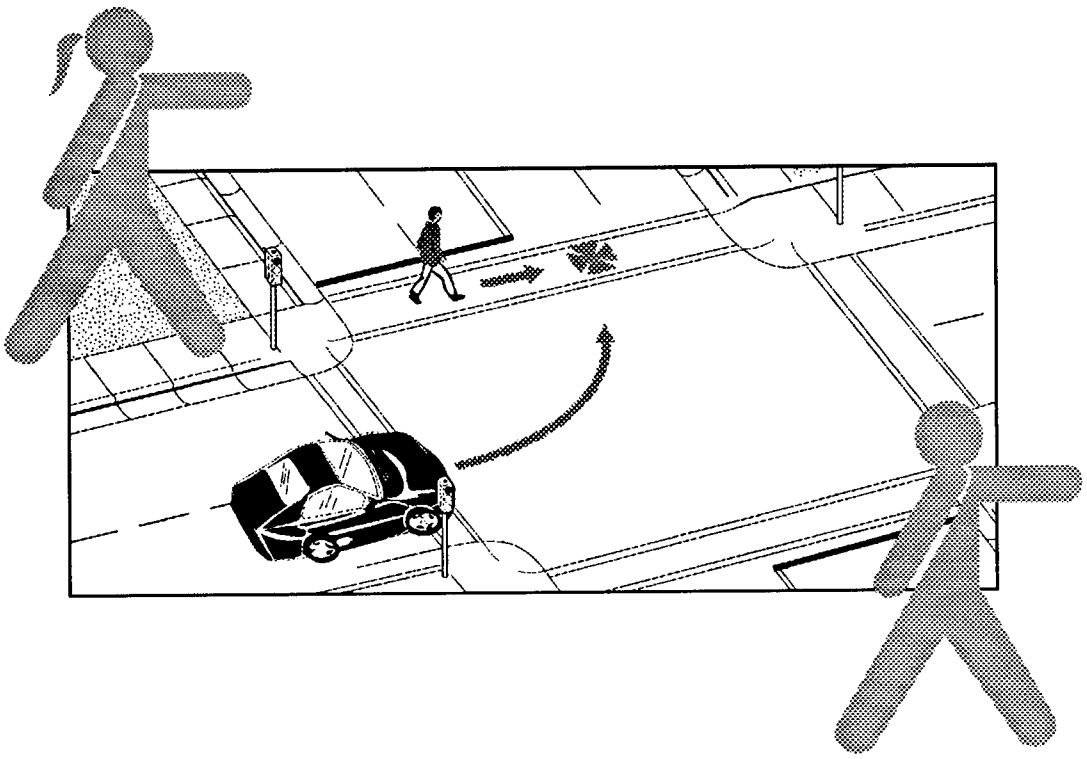


U.S. Department of Transportation
Federal Highway Administration

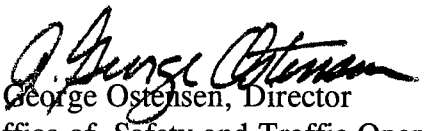
Research and Development
Turner-Fairbank Highway Research Center
6300 Georgetown Pike
McLean, VA 22101-2296

FOREWORD

Approximately one out of six highway fatalities in the United States is a pedestrian or bicyclist each year. Estimates for 1995 indicate that 84,000 pedestrians were injured and 5,585 were killed in traffic crashes. These crashes can be classified or "typed" by their precipitating actions, predisposing factors, and characteristic populations and/or location that can be targeted for intervention.

The information provided in the following guide is the result of a Federal Highway Administration (FHWA) research study that applied the basic National Highway Traffic Safety Administration (NHTSA) pedestrian and bicycle typologies to a sample of pedestrian- and bicycle-motor vehicle crashes from six States with the purpose of refining and updating the crash type distributions. Particular attention was given to roadway and locational factors in order to identify situations where engineering, educational, and/or regulatory countermeasures might be effectively implemented to reduce the frequency of the crashes.

This informational guide should be of interest to State and local pedestrian and bicycle coordinators, transportation planners, and transportation engineers involved in safety and risk management. Other interested parties include those in education, enforcement, and the medical profession.



A. George Ostensen, Director
Office of Safety and Traffic Operations
Research and Development

NOTICE

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15. Supplementary Notes

Contracting Officer's Technical Representative (COTR) Carol Tan Esse (HSR-20)

16. Abstract

This pedestrian crash type informational guide is a supplement to a research report entitled, "Pedestrian and Bicycle Crash Types of the Early 1990's" (FHWA-RD-95-163). The purpose of the research was to apply the basic NHTSA pedestrian and bicyclist typologies to a sample of recent crashes and to refine and update the crash type distributions with particular attention to roadway and locational factors. Five thousand pedestrian- and 3,000 bicycle-motor vehicle crashes were coded in a population-based sample drawn from the States of California, Florida, Maryland, Minnesota, North Carolina, and Utah. The pedestrian-motor vehicle crash types distributed as: Special circumstances 2.6 percent, Vehicle specific - 9.1 percent, Disabled/Emergency vehicle-related - 2.4 percent, Working/Playing in roadway - 3.0 percent, Walking along road/Crossing expressway - 7.9 percent, Not in road - 8.6 percent, Intersection-related - 32.1 percent, Midblock - 26.4 percent, and Other or inadequate information - 7.8 percent. This particular informational guide provides detail on specific pedestrian-motor vehicle crash types (e.g., intersection dash) through two-page layouts that contain a sketch, description, and summary of the crash type, various graphs, and "bullet" information boxes. A similar information guide, "Bicycle Crash Types: A 1990's Informational Guide" (FHWA-RD-96-104), is available for bicycle-motor vehicle crashes.

17. Key Words	18. Distribution Statement
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Unclassified	Unclassified	99	

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SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
	LENGTH			
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
	AREA			
in^2	square inches	645.2	square millimeters	mm^2
ft^2	square feet	0.093	square meters	m^2
yd^2	square yards	0.836	square meters	m^2
ac	acres	0.405	hectares	ha
mi^2	square miles	2.59	square kilometers	km^2
	VOLUME			
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
NOTE: Volumes greater than 1000 l shall be shown in m^3.				
	MASS			
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
	TEMPERATURE (exact)			
°F	Fahrenheit temperature	5(F-32)/9 or (F-32)/1.8	Celcius temperature	°C
	ILLUMINATION			
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m^2	cd/m^2
	FORCE and PRESSURE or STRESS			
lbf	poundforce	4.45	newtons	N
lbf/in^2	poundforce per square inch	6.89	kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
	LENGTH			
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
	AREA			
mm^2	square millimeters	0.0016	square inches	in^2
m^2	square meters	10.764	square feet	ft^2
m^2	square meters	1.195	square yards	yd^2
ha	hectares	2.47	acres	ac
km^2	square kilometers	0.386	square miles	mi^2
	VOLUME			
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m^3	cubic meters	35.71	cubic feet	ft^3
m^3	cubic meters	1.307	cubic yards	yd^3
	MASS			
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
	TEMPERATURE (exact)			
°C	Celcius temperature	1.8C + 32	Fahrenheit temperature	°F
	ILLUMINATION			
lx	lux	0.0929	foot-candles	fc
cd/m^2	candela/m^2	0.2919	foot-Lamberts	fl
	FORCE and PRESSURE or STRESS			
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in^2

* SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380.

(Revised September 1993)

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LIST OF FIGURES (Continued)

ABOUT THIS INFORMATIONAL GUIDE

Background

This publication provides information about pedestrian-motor vehicle crash types of the early 1990's. The crash types follow closely the current National Highway Traffic Safety Administration (NHTSA) coding convention used with the General Estimates System (GES) data, whereby a stratified sample of crashes reported by police from across the United States are used to make national estimates of the occurrence and severity of pedestrian-motor vehicle crashes. The crash types are based on research carried out by Snyder and Knoblauch in the early-1970's. Thirty-seven distinct crash types are identified in the NHTSA typology. Examples include:

- Dart-out.
- Intersection dash.
- Walking along road.
- Backing vehicle.

The data for the publication are part of a research project carried out for the Centers for Disease Control, with funding provided by the Federal Highway Administration (FHWA). The purpose of this research was to apply the basic NHTSA crash typologies to a sample of recent crashes and to refine and update the crash type distributions with particular emphasis on roadway and locational factors. The parent research project covers 5,000 pedestrian- and 3,000 bicycle-motor vehicle crashes selected equally from six States (California, Florida, Maryland, Minnesota, North Carolina, and Utah) and reports findings pertinent to primary groups of crashes (see Hunter, Stutts, Pein and Cox, "Pedestrian and Bicycle Crash Types of the Early 1990's, FHWA-RD-95-163, February 1995). This informational guide provides detail on specific crash types and is concerned with only the 5,000 pedestrian-motor vehicle crashes from the six States. The pedestrian sample was derived by selecting more than 800 police-reported crashes from small, medium, and large communities within each State.

Police report hard copies were examined to code the specific crash type, as well as many other items. Additional items coded and analyzed included:

- Crash descriptors (motor vehicle-pedestrian pre-crash maneuvers, time of day, etc.).
- Locational descriptors (road feature, private property details, etc.).

- Pedestrian characteristics (age, special equipment used, etc.).
- Driver contributing factors (yield violation, alcohol use, etc.).
- Pedestrian contributing factors (jaywalking, ran into street, etc.).
- Motor vehicle contributing factors (defective brakes, unclear windshield, etc.).
- Roadway/environment contributing factors (weather condition, sun glare, etc.).
- Fault (driver only, pedestrian only, neither, etc.).

In addition to coding the crash type and other variables discussed above, the cases were linked to the basic crash file for each State. This enabled the use of many more variables in the analysis, such as age and gender of pedestrian and driver, other roadway descriptors, and motor vehicle variables. Upon completion of clean-up and file linkage, approximately 5,000 cases were available for analysis.

The Crash Typology

The crash types are broadly distributed into nine main categories. For this particular data set, the distribution of crashes was the following:

- Special circumstances (133 crashes, 2.6 percent of total).
- Vehicle specific (460 crashes, 9.1 percent of total).
- Disabled/Emergency vehicle-related (124 crashes, 2.4 percent of total).
- Working/Playing in roadway (152 crashes, 3.0 percent of total).
- Walking along road/Crossing expressway (400 crashes, 7.9 percent of total).
- Not in road (436 crashes, 8.6 percent of total).
- Intersection-related (1,630 crashes, 32.1 percent of total).
- Midblock (1,341 crashes, 26.4 percent of total).
- Other or inadequate information (397 crashes, 7.8 percent of total).

The intersection-related and midblock events were the most frequent, accounting for almost 60 percent of all crashes. Detailed results about these groups of crash types are contained in the final report for the project (Hunter, Stutts, Pein and Cox, 1995).

[*Note: The appendix of this informational guide contains coding guidelines for pedestrian crash typing. These guidelines were adapted from NHTSA's "Manual Accident Typing for Pedestrian Accidents - Coder's Handbook." The Coder's Handbook can be found in Appendix A of the parent document, "Pedestrian and Bicycle Crash Types of the Early 1990's (FHWA-RD-95-163).]*

Individual Crash Types

Within the 9 crash groups are 37 individual crash types. For example, the group of crashes entitled "Vehicle specific" is made up of the following individual crash types:

- **Driverless vehicle**—Pedestrian struck was driver of the vehicle.
- **Driverless vehicle**—Pedestrian struck was not the driver of the vehicle.
- **Backing vehicle**—Pedestrian struck by a vehicle which was backing.
- **Hot pursuit**—Pedestrian struck by a vehicle on an emergency/police mission, or by a vehicle being pursued.

The focus of the remainder of this document is detailed information about many of the 37 individual crash types. Two-page layouts (i.e., left and right facing pages) are used for each individual crash type to convey a variety of information. The order of the presentation parallels NHTSA's Coder's Handbook.

An Orientation to the Individual Crash Type Information

Each two-page layout basically contains the information presented below (a few differ because of small numbers of crashes). Examine the example pages for "Vehicle Turn/Merge" that follow for a more thorough orientation.

Left Side Page

- A title bar, with additional information about the frequency and severity of the crash. The severity is based on the typical "KABCO" scale used by police, where "K" is killed, an "A" injury is defined as serious, "B" moderate, "C" minor, and "O" no injury.
- A sketch that shows a simple depiction of the event. Various backgrounds are used,

such as an urban intersection, a rural intersection, a suburban location, a residential location, a rural location, etc.

- A description of the crash type.
- A summary of the crash type that includes a variety of information. Generally there are comments about the ages of the involved pedestrians, the light condition, number of lanes, speed limit, crash severity, alcohol use, etc. No exposure data were available for the analysis, so comparisons for a variable within a particular crash type are often made with all crashes combined (e.g., ages of pedestrians involved in "Vehicle Turn/Merge" compared with pedestrian age for all crashes). The same would be true for the other variables mentioned above. Overall, over 33 percent of the crashes resulted in severe and fatal (A+K) injuries to the pedestrian. The summary usually comments on whether the individual crash type was more or less severe than this average. It was normally the case that lower speed crashes (e.g., those occurring primarily in neighborhoods) resulted in less severity than higher speed crashes (e.g., those occurring more often on rural highways).
- A bar chart of the ages of the involved pedestrians for the particular crash type versus all crash types combined. Information for the crash type discussed on the two pages is always shown in green and the "all crash type" comparison is always shown in black.

Right Side Page

- Graphs of the light condition, the number of lanes, and the speed limit for the particular crash type (where applicable) versus all crash types combined. Again, the information for the crash type discussed on the two pages is shown in green and the "all crash type" comparison is shown in black.
- "Bullet" boxes that pertain to variables of interest for this particular crash type. "Alcohol Use," "Development Character," (urban versus rural), "Day of Week," "Road Feature," and "Pedestrian Location" generally appear in this area.

All two-page layouts are generally similar for ease in comparison. However, differences may appear depending on the amount of detail available for a particular crash type. As an

example, the crash type labeled as "Other -Weird" contains no drawing of the event because circumstances could be so variable from one "weird" crash to another that a "typical" drawing is very difficult to define. The appendix describes the process followed in assigning a crash type code to the individual crash reports examined.

Title

Incidence

Sketch

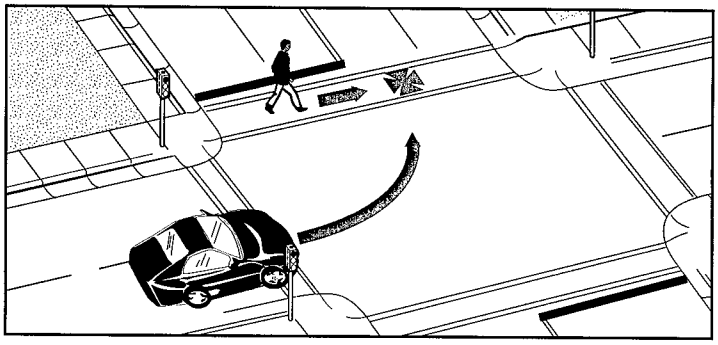
Description

Summary

Age Chart

Vehicle Turn/Merge

Frequency: 497 cases; 9.8% of all crashes
Severity: 18% resulted in serious or fatal injuries



Description: The pedestrian and vehicle collided while the vehicle was preparing to turn, in the process of turning, or had just completed a turn (or merge).

Summary: In comparison to all crashes, this crash was more likely to involve adult pedestrians ages 25 and above.

This was largely an urban event (77%).

It was more likely to occur on 3 to 4 lane roads and on roads with speed limits of 50 to 60 km/h.

"Vehicle Turn/Merge" crashes were less severe than the average.

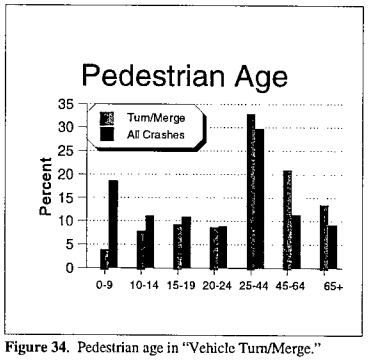


Figure 34. Pedestrian age in "Vehicle Turn/Merge."

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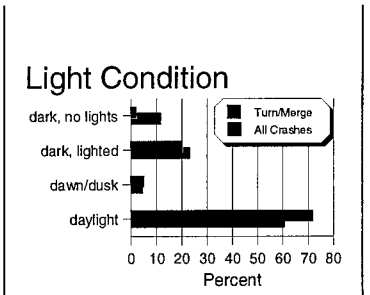
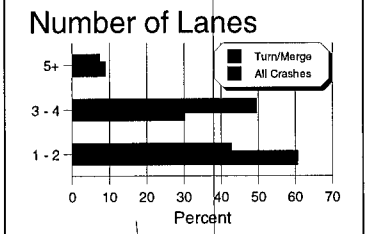
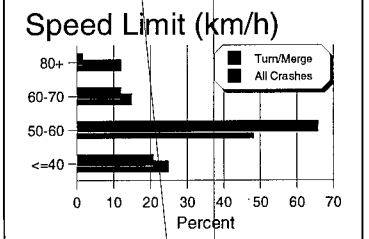
Layout diagram - left side.

Title

Vehicle Turn/Merge







Alcohol use
Pedestrian 5%
Driver 3%

Development Character
Urban 77%
Rural 23%

Day of Week
Weekday 77%
Weekend 23%

Road Feature
Intersection 96%
All other 4%

Pedestrian Location
Travel lane 99%
Median 1%

Figure 35. Light condition, number of lane, and speed limit in "Vehicle Turn/Merge."

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Bullet Boxes

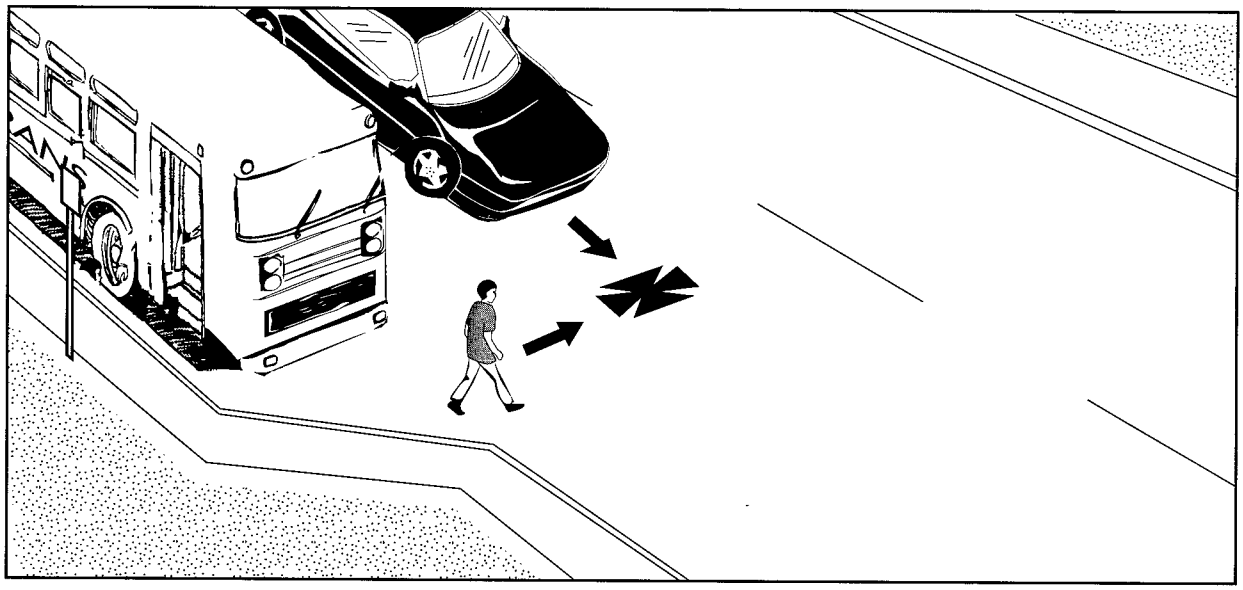
Charts

Layout diagram - right side.

Special Circumstances

Commercial Bus Related

Frequency: 22 cases; 0.4% of all crashes
Severity: 23% resulted in serious or fatal injuries



Description: The pedestrian was struck by another vehicle while crossing in front of a commercial bus stopped at a marked bus stop.

Summary: In comparison to all crashes, this crash was more likely to involve youth (age 10 to 14) and especially teen (age 15 to 19) pedestrians who accounted for almost half of these events.

This was largely an urban event (77%). Eighty percent occurred on roads with a speed limit of 50 to 60 km/h (30 to 35 mi/h), and more than 40 percent occurred under dark, lighted conditions.

Alcohol involvement was lower than the average for pedestrians, but higher than the average for the motorist. This crash tended to be less severe than the average.

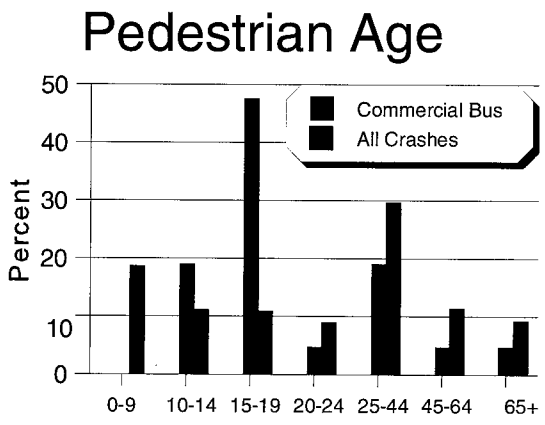
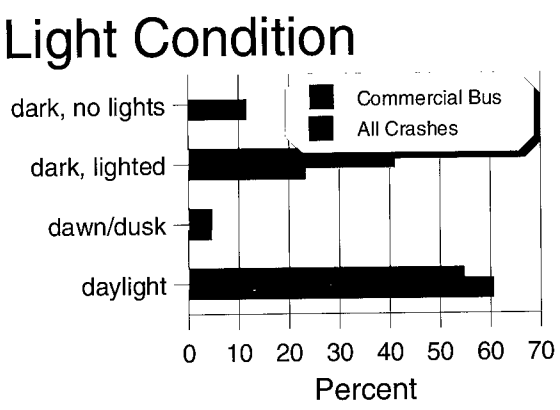
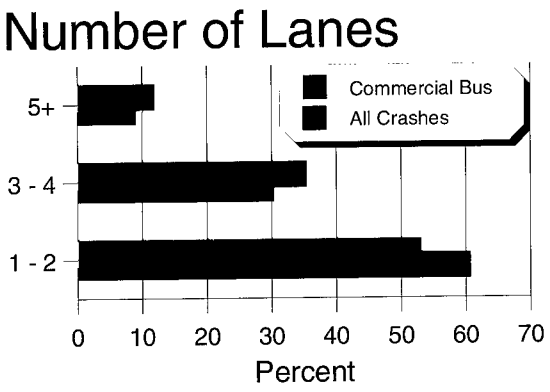


Figure 1. Pedestrian age in "Commercial Bus Related."





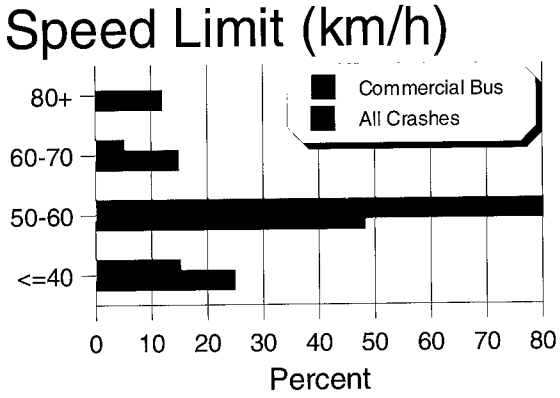


Figure 2. Light condition, number of lanes, and speed limit in "Commercial Bus Related."

Alcohol use

Pedestrian	5%
Driver	9%

Development Character

Urban	77%
Rural	23%

Day of Week

Weekday	68%
Weekend	32%

Road Feature

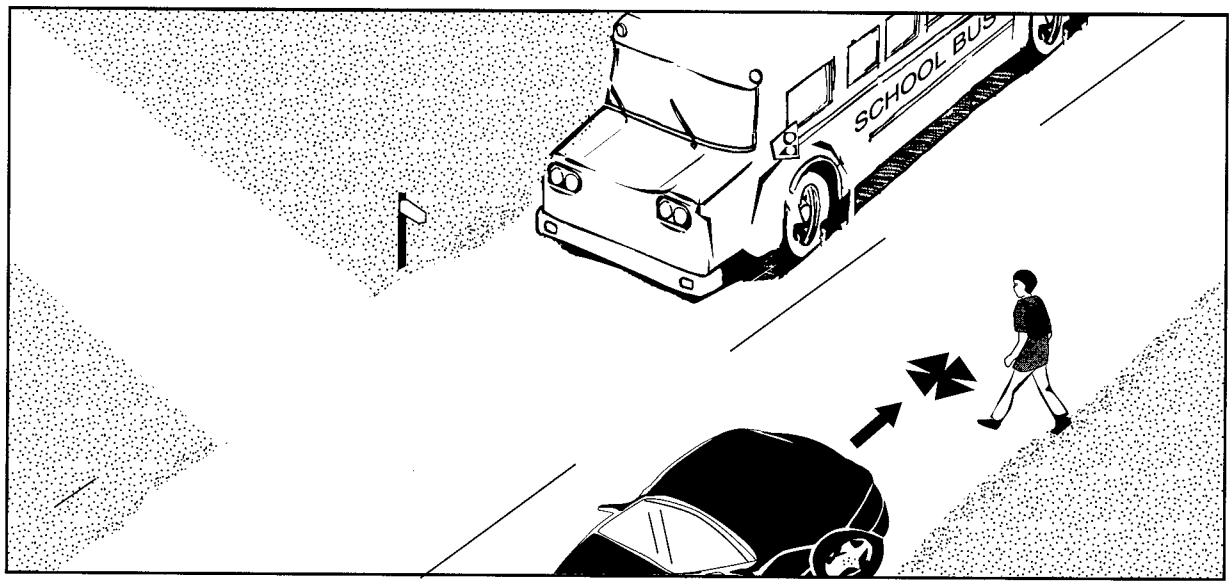
No special feature	56%
Intersection	44%

Pedestrian Location

Travel lane	100%

School Bus Related

Frequency: 22 cases; 0.4% of all crashes
Severity: 32% resulted in serious or fatal injuries



Description: The pedestrian was struck going to or from a school bus or school bus stop.

Summary: This crash involved only child (age 0 to 9), youth (age 10 to 14) and teen (age 15 to 19) pedestrians.

The vast majority of these crashes occurred during daylight hours. Most occurred on 1 to 2 lane roads and on roads with speed limits of 60 km/h or less.

More than 40 percent occurred in rural areas. None involved alcohol.

"School Bus Related" crashes were of average severity.

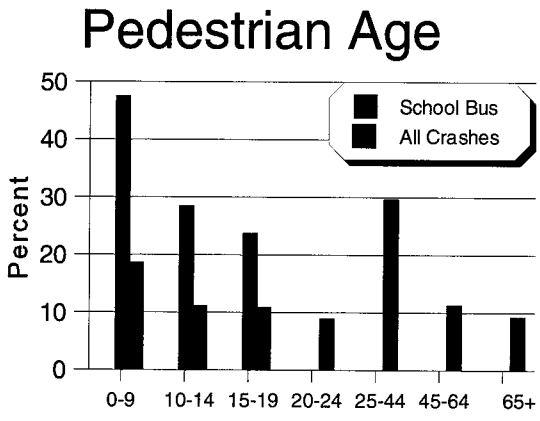
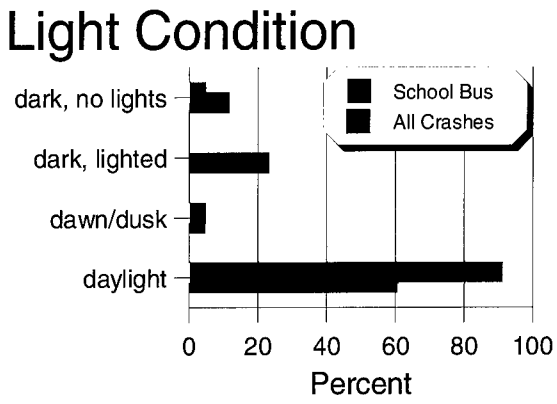
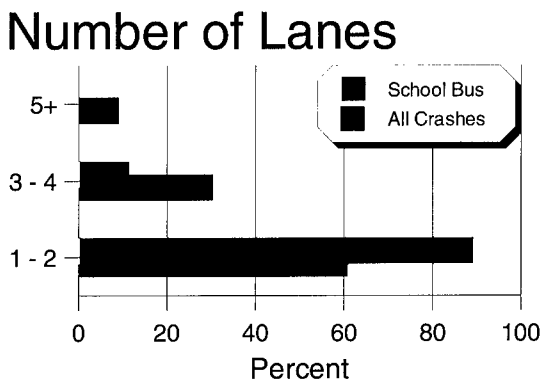


Figure 3. Pedestrian age in "School Bus Related."





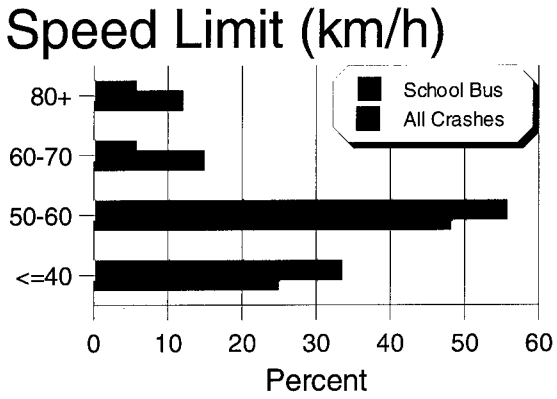


Figure 4. Light condition, number of lanes, and speed limit in "School Bus Related."

Alcohol use

Pedestrian	0%
Driver	0%

Development Character

Urban	59%
Rural	41%

Day of Week

Weekday	86%
Weekend	14%

Road Feature

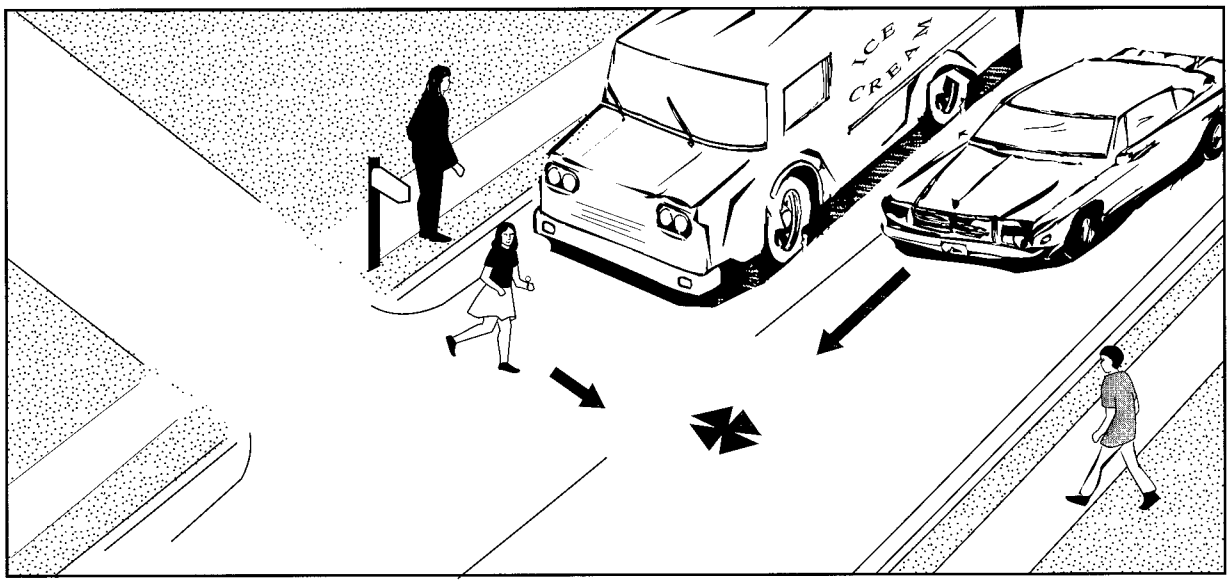
No special feature	52%
Intersection	38%
Public driveway	5%
Other	5%

Pedestrian Location

Travel lane	95%
Shoulder	5%

Ice Cream Vendor

Frequency: 40 cases; 0.8% of all crashes
Severity: 21% resulted in serious or fatal injuries



Description: The pedestrian was struck while going to or from an ice cream vendor and the striking vehicle was on the same street as the vendor.

Summary: In comparison to all crashes, this crash was more likely to involve child (age 0 to 9) and youth (age 10 to 14) pedestrians.

Daylight, 1 to 2 lane roads, and roads with a speed limit less than or equal to 40 km/h were strongly overrepresented. Urban areas were also overrepresented.

None of the pedestrians and only 5 percent of the motorists had been drinking.

"Ice Cream Vendor" crashs tended to be less severe than the average.

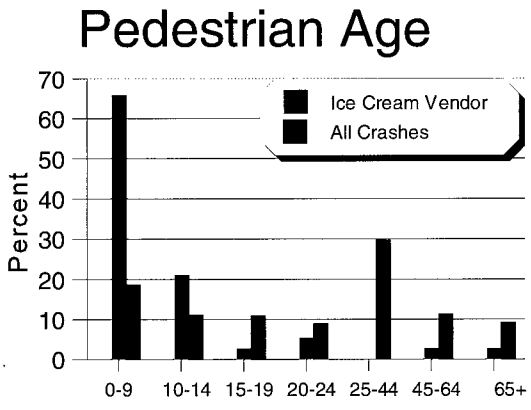
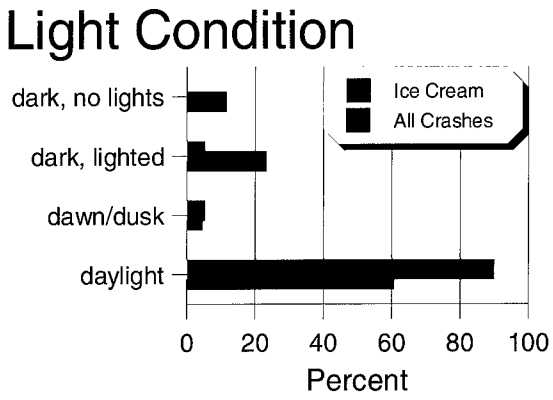
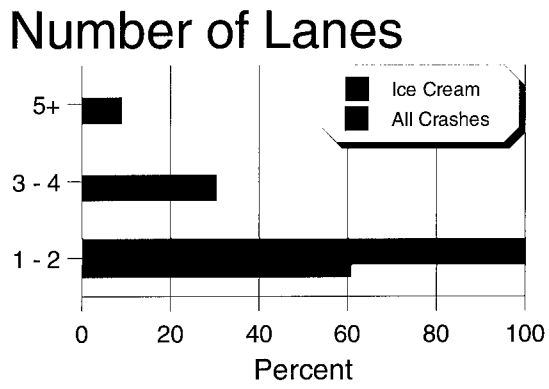


Figure 5. Pedestrian age in "Ice Cream Vendor."





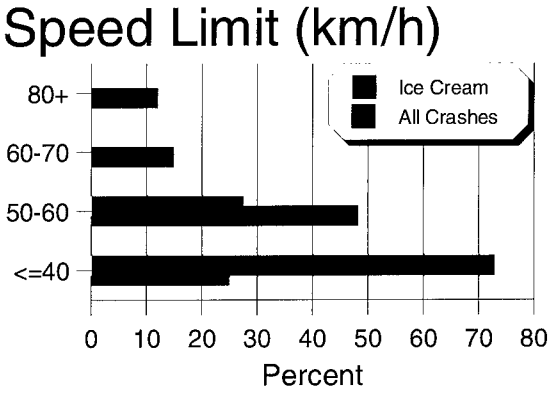


Figure 6. Light condition, number of lanes, and speed limit in "Ice Cream Vendor."

Alcohol use

Pedestrian	0%
Driver	5%

Development Character

Urban	79%
Rural	21%

Day of Week

Weekday	64%
Weekend	36%

Road Feature

No special feature	82%
Intersection	6%
Private driveway	6%
Public driveway	3%
Other	3%

Pedestrian Location

Travel lane	95%
Parking lot lanes	3%
Parking lot unknown	3%

Mailbox Related

Frequency: 16 cases; 0.3% of all crashes
Severity: 50% resulted in serious or fatal injuries

Description: The pedestrian was struck while going to or from a private residence mailbox or newspaper box.

Summary: In comparison to all crashes, this crash was more likely to involve child (age 0 to 9) and elderly (age 65+) pedestrians.

This was largely a rural event (63%). All took place on 1 to 2 lane roads, and higher speed roads were strongly overrepresented. Forty percent took place on roads with a speed limit of 80 km/h or greater.

Alcohol was generally not a factor in these crashes. Although the number of cases was small, this crash was much more likely than average to result in a serious or fatal injury.

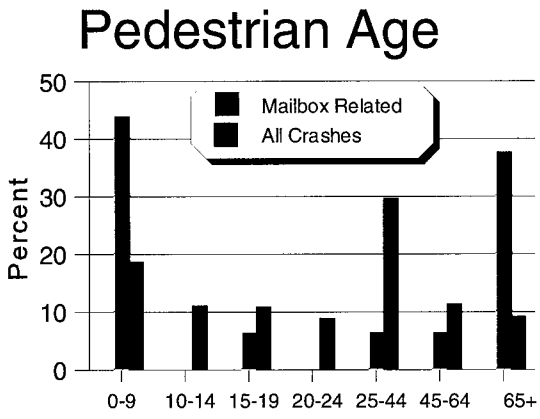
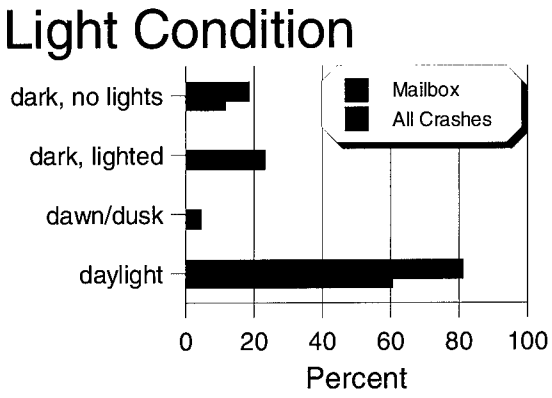
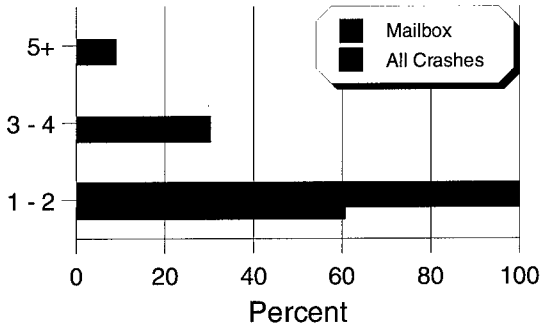


Figure 7. Pedestrian age in "Mailbox Related."





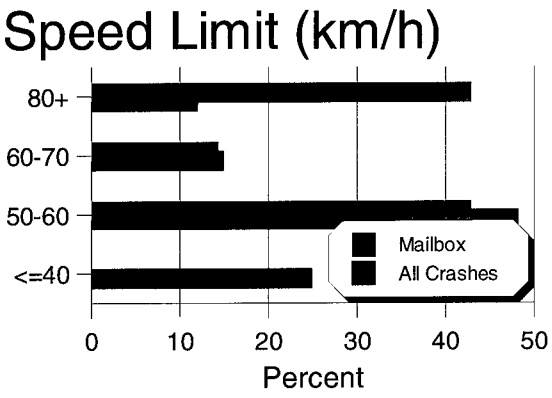


Figure 8. Light condition, number of lanes, and speed limit in "Mailbox Related."

Alcohol use

Pedestrian	0%
Driver	0%

Development Character

Urban	38%
Rural	63%

Day of Week

Weekday	69%
Weekend	31%

Road Feature

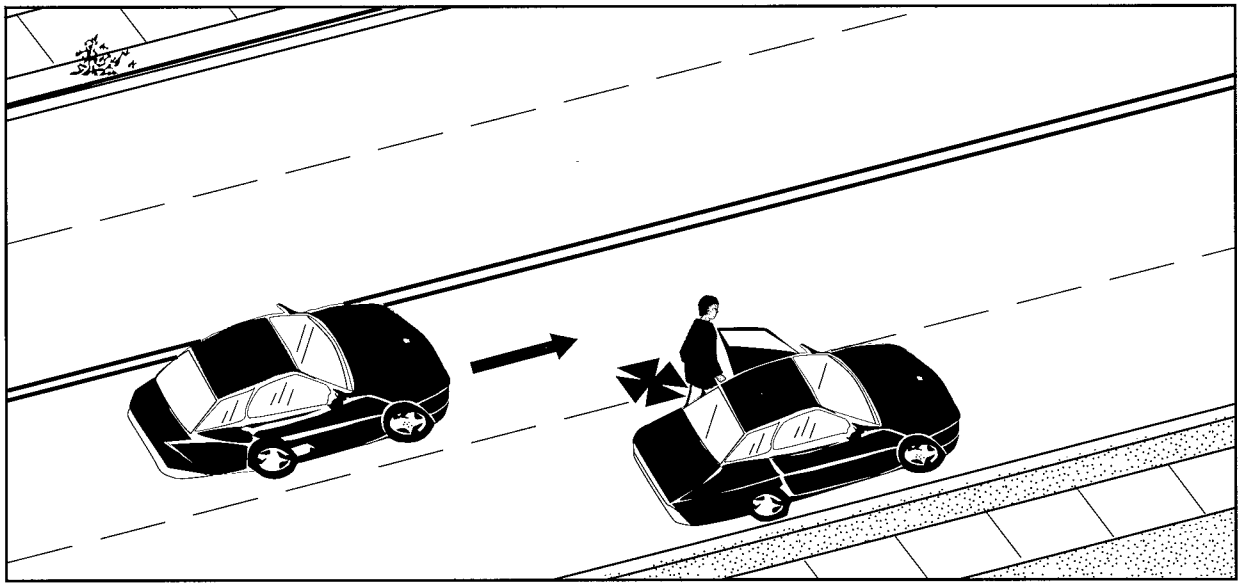
No special feature	62%
Private driveway	31%
Intersection	8%

Pedestrian Location

Travel lane	100%

Exiting Or Entering Parked Vehicle

Frequency: 33 cases; 0.7% of all crashes
Severity: 31% resulted in serious or fatal injuries



Description: The pedestrian was in the process of exiting or entering a parked or stopped vehicle and was struck in the adjacent traffic lane.

Summary: In comparison to all crashes, this crash was more likely to involve adult (age 25 to 44) and middle adult (age 45 to 64) pedestrians.

Almost half occurred on the weekend as compared to 35 percent for all crashes combined.

Fifteen percent of the drivers had been drinking but only 4 percent of pedestrians.

This crash type was of average severity.

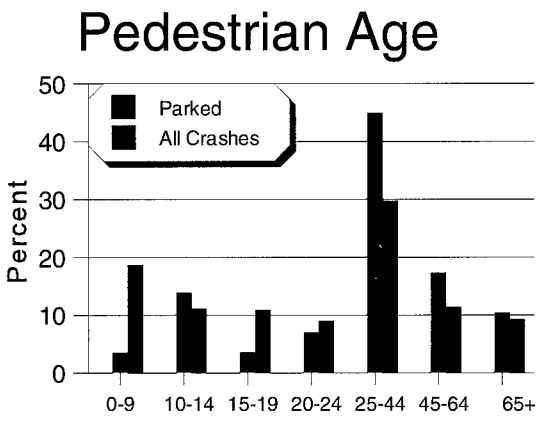
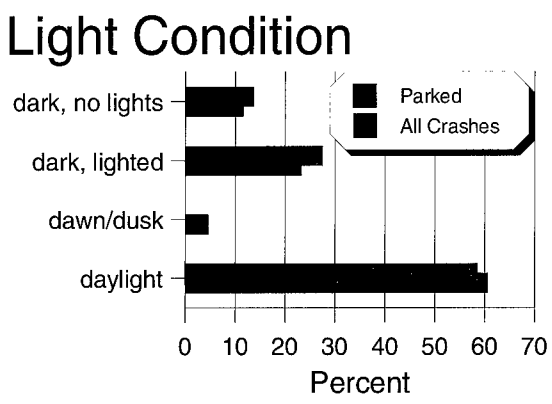
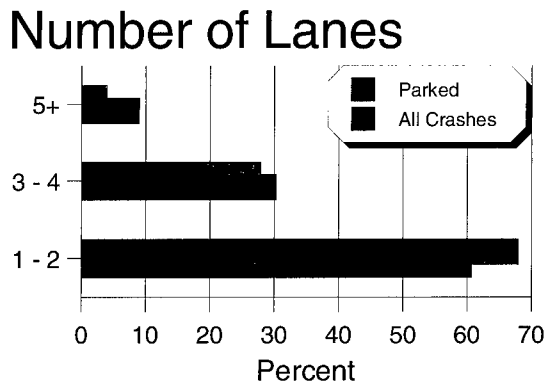


Figure 9. Pedestrian age in "Exiting Or Entering Parked Vehicle."





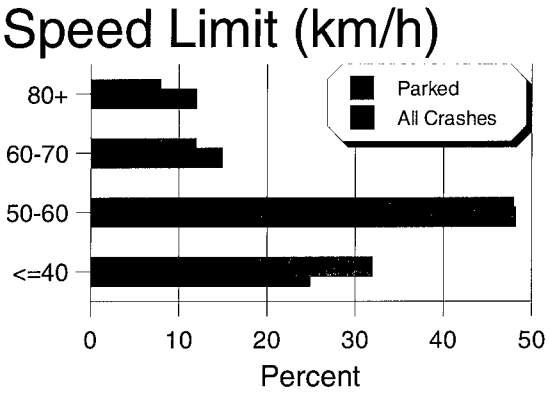


Figure 10. Light condition, number of lanes, and speed limit in "Exiting Or Entering Parked Vehicle."

Alcohol use

Pedestrian	4%
Driver	15%

Development Character

Urban	72%
Rural	28%

Day of Week

Weekday	52%
Weekend	48%

Road Feature

No special feature	78%
Intersection	19%
Other	3%

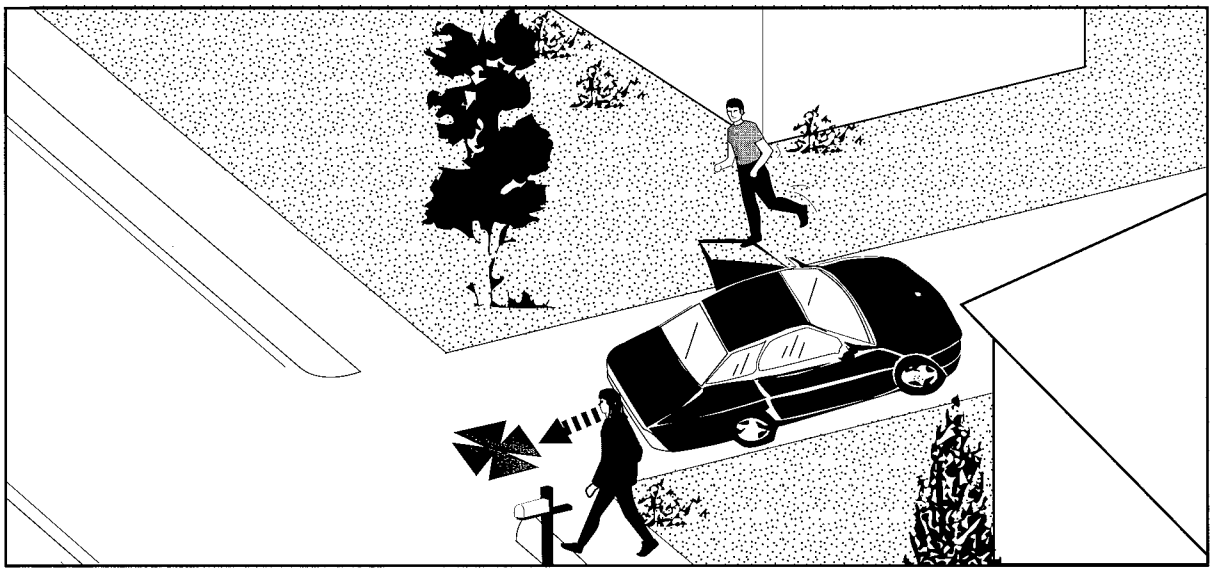
Pedestrian Location

Travel lane	70%
On-street parking	18%
Parking lot lanes	3%
Shoulder	3%
Other	6%

Vehicle Specific

Driverless Vehicle

Frequency: 104 cases; 2.1% of all crashes
Severity: 38% resulted in serious or fatal injuries



Description: The pedestrian was struck by a vehicle that was moving without a driver at the controls or was set into motion by the actions of a child.

Summary: In comparison to all crashes, this event was more likely to involve pedestrians age 25 and older.

In 77 percent of these crashes the struck pedestrian was **not** the original driver of the vehicle.

Thirty-seven percent happened in a parking lot, and an additional 20 percent in a driveway or alley.

More than 80 percent occurred during daylight. "Driverless Vehicle" crashes were slightly more severe than average.

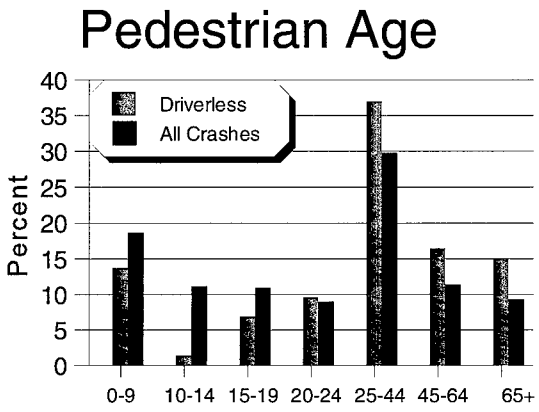
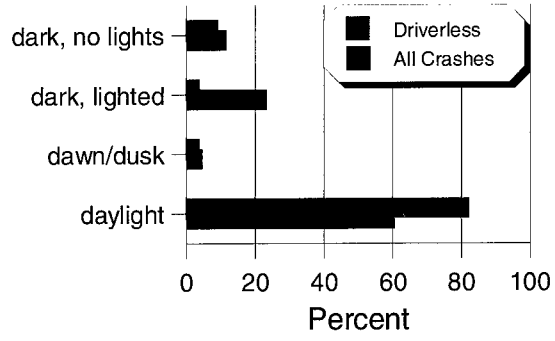


Figure 11. Pedestrian age in "Driverless Vehicle."



Number of Lanes and Speed Limit graphs are not shown because this crash type most often occurs off-road.

Alcohol use

Pedestrian	2%
Driver	0%

Development Character

Urban	61%
Rural	39%

Day of Week

Weekday	69%
Weekend	31%

Road Feature

No special feature	35%
Private driveway	17%
Public driveway	6%
Intersection	5%
Alley	1%
All other	37%

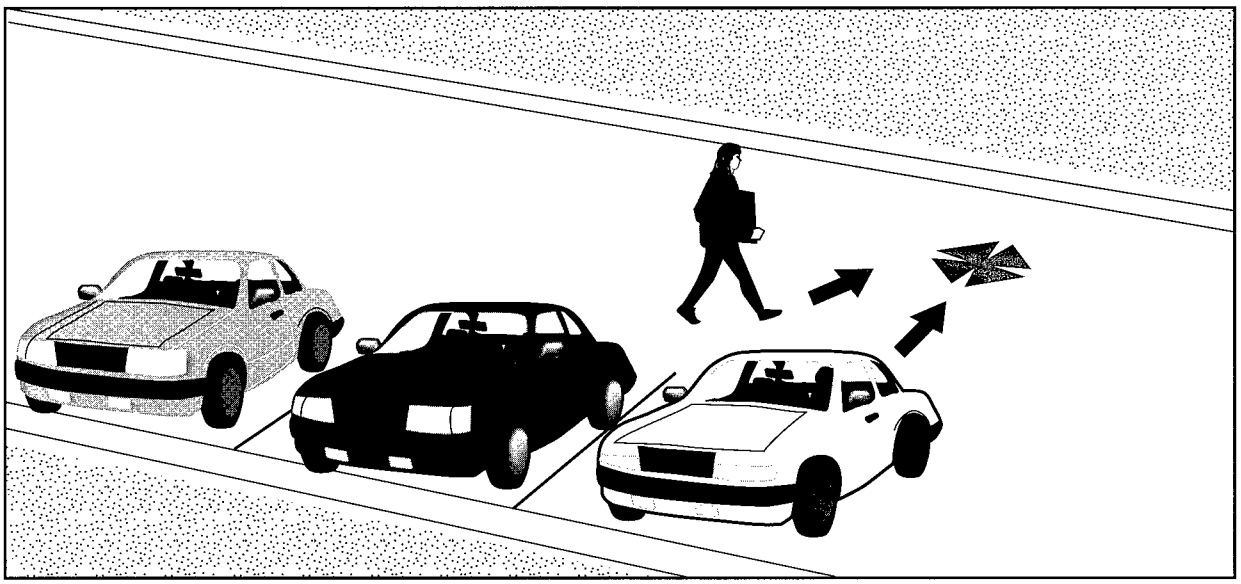
Pedestrian Location

Travel lane	26%
Parking lot space	25%
Alley/Driveway	20%
Parking lot lanes	8%
Parking lot, other	4%
All other	18%

Figure 12. Light condition in "Driverless Vehicle."

Backing Vehicle

Frequency: 351 cases; 6.9% of all crashes
Severity: 23% resulted in serious or fatal injuries



Description: The pedestrian was struck by a vehicle that was backing.

Summary: In comparison to all crashes, this crash was more likely to involve elderly (age 65+) pedestrians.

Forty-four percent occurred in a parking lot location, and 13 percent in a driveway or alley.

Overall, 11 percent of pedestrians had been drinking, and 19 percent of those ages 20 to 44.

"Backing" crashes were less severe than the average.

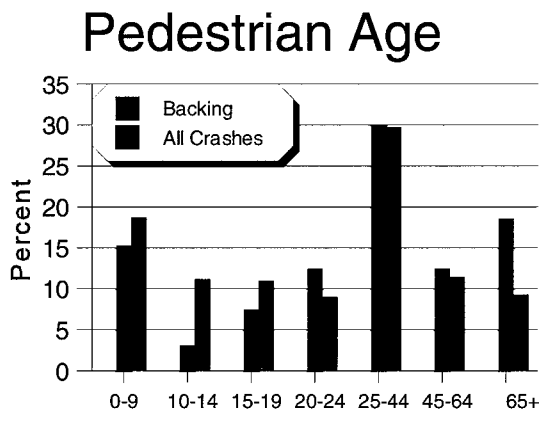
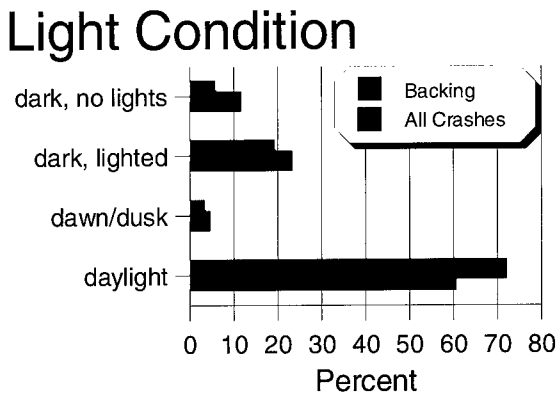


Figure 13. Pedestrian age in "Backing Vehicle."



Number of Lanes and Speed Limit graphs are not shown because these variables are not relevant to this crash type.

Figure 14. Light condition in "Backing Vehicle."

Alcohol use

Pedestrian	11%
Driver	6%

Development Character

Urban	62%
Rural	38%

Day of Week

Weekday	68%
Weekend	32%

Road Feature

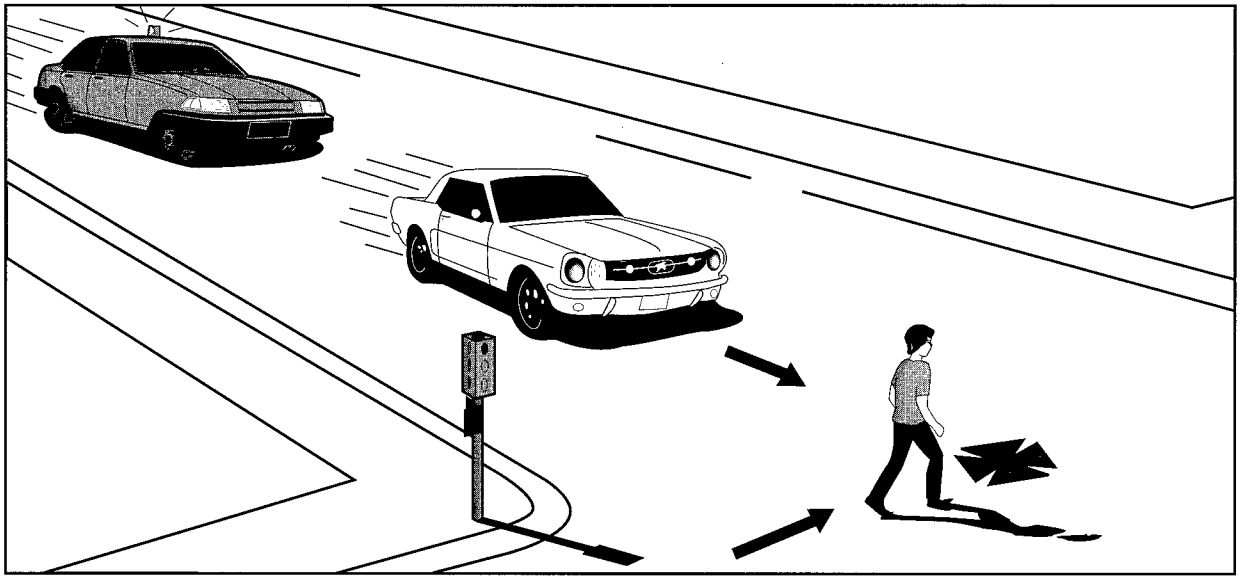
No special feature	19%
Private driveway	15%
Intersection	9%
Public driveway	9%
Alley	<1%
All other	48%

Pedestrian Location

Parking lot space	31%
Travel lane	23%
Alley/Driveway	13%
Parking lot lanes	8%
Parking lot unknown	5%
All other	20%

Hot Pursuit

Frequency: 5 cases; 0.1% of all crashes
Severity: 60% resulted in serious or fatal injuries



Description: The pedestrian was struck by a vehicle on an emergency/police mission, or by a vehicle being pursued.

Summary: These few crashes happened exclusively to adult (age 25 to 44) pedestrians.

Four of the five cases occurred in an urban area, on a weekday, and during conditions of darkness. Three of the pedestrians had been drinking.

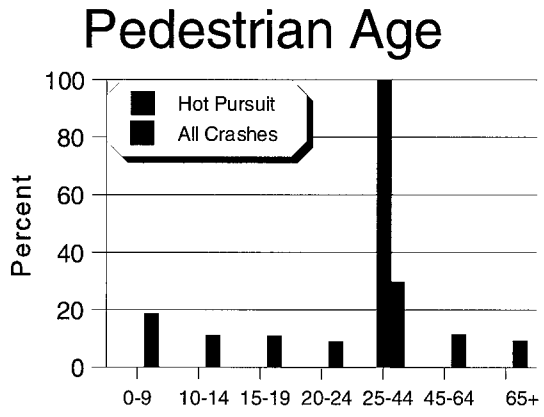
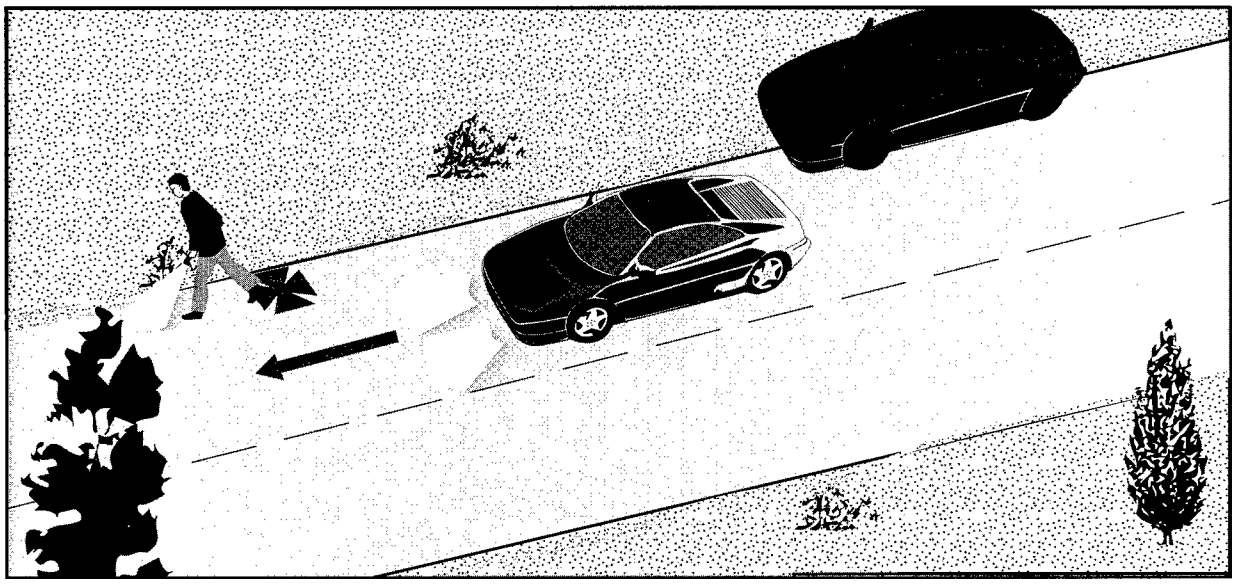


Figure 15. Pedestrian age in "Hot Pursuit."

Disabled/Emergency Vehicle Related

Disabled Vehicle Related

Frequency: 124 cases; 2.5% of all crashes
Severity: 42% resulted in serious or fatal injuries



Description: The pedestrian was struck while walking to or from (9 cases) or while near or next to (105 cases) a disabled vehicle (no emergency vehicle present), or while near an active police or emergency vehicle (10 cases).

Summary: In comparison to all crashes, this crash was more likely to involve adult (age 25 to 44) pedestrians.

Almost 40 percent occurred during dark, no lights conditions, and almost 20 percent took place on roads with 5 to 10 lanes. More than 50 percent happened on roads with a speed limit of 80+ km/h, and in 27 percent of the cases the pedestrian was on the shoulder.

Almost half occurred on the weekend.

Twelve percent of drivers had been drinking.

This crash type tended to more serious than the average.

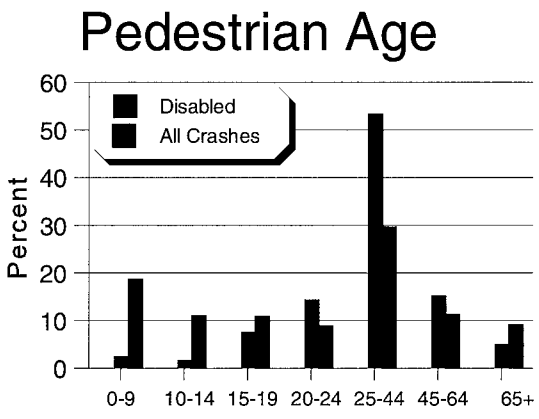
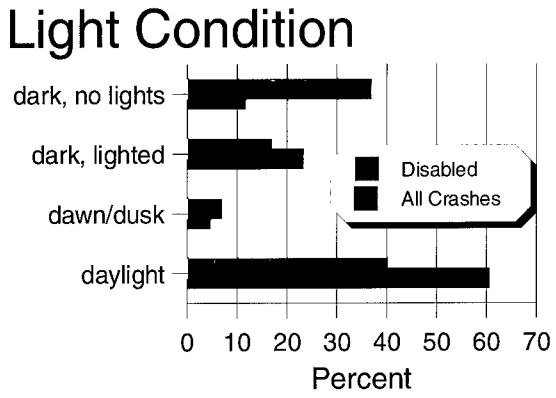
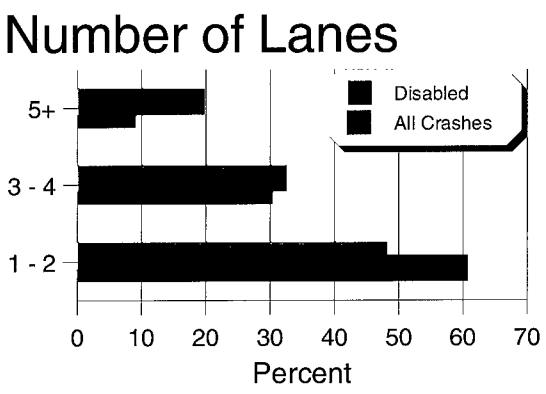


Figure 16. Pedestrian age in "Disabled Vehicle Related."





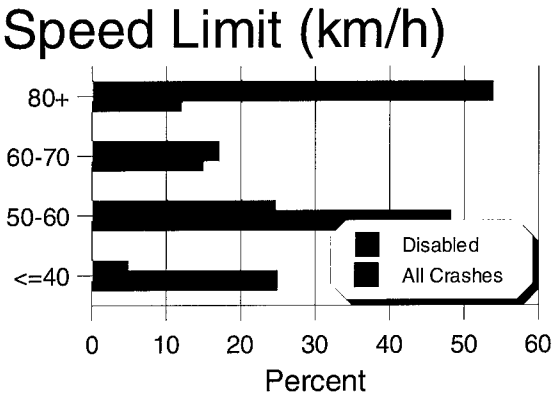


Figure 17. Light condition, number of lanes, and speed limit in "Disabled Vehicle Related."

Alcohol use

Pedestrian	7%
Driver	12%

Development Character

Urban	56%
Rural	44%

Day of Week

Weekday	55%
Weekend	45%

Road Feature

No special feature	72%
Intersection	15%
Private driveway	<1%
Public driveway	<1%
Alley	0%
All other	12%

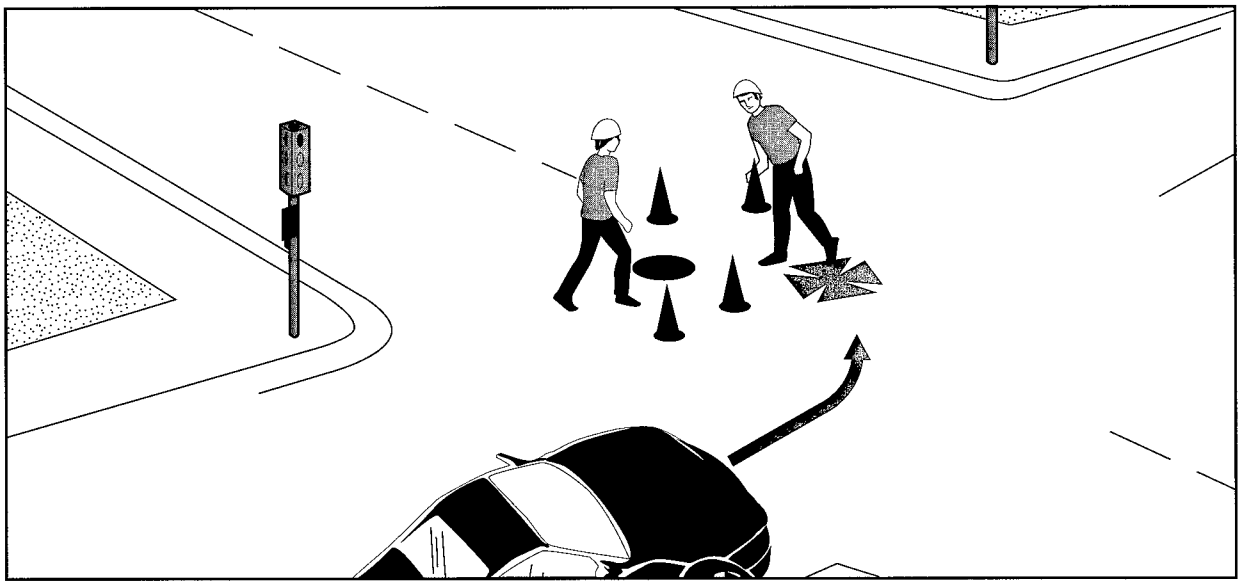
Pedestrian Location

Travel lane	61%
Shoulder	27%
Median	4%
All other	8%

Working/Playing In Roadway

Working On Roadway

Frequency: 69 cases; 1.4% of all crashes
Severity: 20% resulted in serious or fatal injuries



Description: The pedestrian (e.g., police/emergency personnel, flagman, road maintenance crew, etc.) was struck while working on, in, over, or under the roadway.

Summary: In comparison to all crashes, this crash was more likely to involve adult (age 25 to 44) and middle adult (age 45 to 64) pedestrians.

Eighty percent occurred during daylight conditions, and more than 25 percent happened on roads with a speed limit of 80+ km/h.

None of the pedestrians had been drinking.

This crash was less severe than the average.

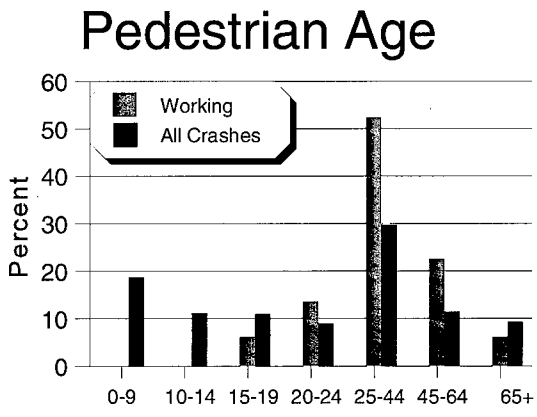
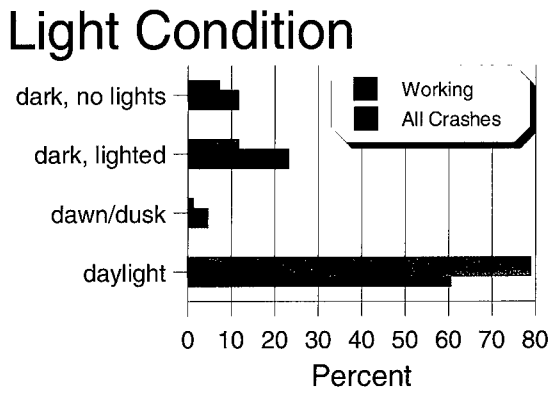
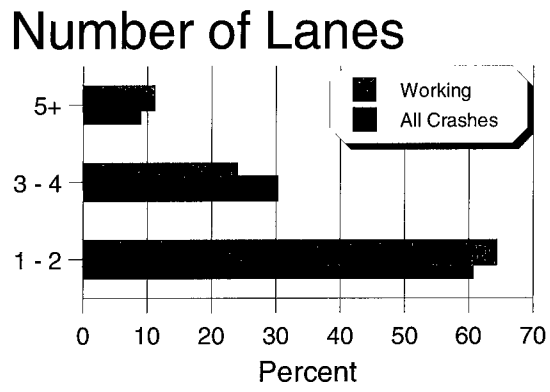


Figure 18. Pedestrian age in "Working On Roadway."





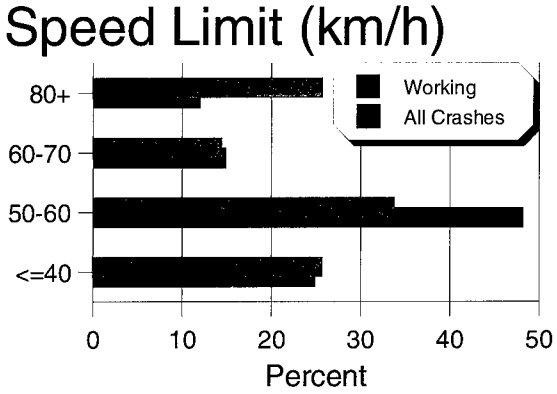


Figure 19. Light condition, number of lanes, and speed limit in "Working On Roadway."

Alcohol use

Pedestrian	0%
Driver	7%

Development Character

Urban	60%
Rural	40%

Day of Week

Weekday	76%
Weekend	24%

Road Feature

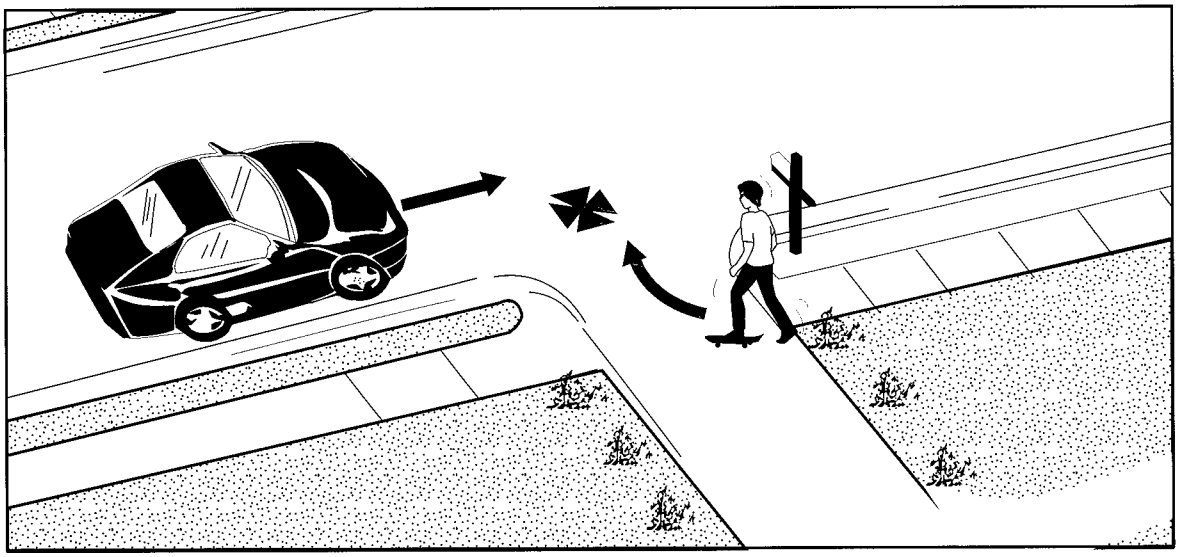
No special feature	60%
Intersection	29%
All other	10%

Pedestrian Location

Travel lane	71%
Shoulder	10%
Roadway, unknown	6%
All other	13%

Play Vehicle Related

Frequency: 35 cases; 0.7% of all crashes
Severity: 38% resulted in serious or fatal injuries



Description: The pedestrian was struck while riding a play vehicle (e.g. wagon, sled, skateboard, skates, "big wheel" type tricycle, or tricycle).

Summary: In comparison to all crashes, this crash was more likely to involve child (ages 0 to 9) and youth (ages 10 to 14) pedestrians.

Eighty percent occurred during daylight conditions, and 11 percent during dawn/dusk. Almost all took place on roads with 1 to 2 lanes, and roads with a speed limit <= 40 km/h were strongly represented.

None of the pedestrians or drivers had been drinking.

This type of crash was slightly more severe than the average.

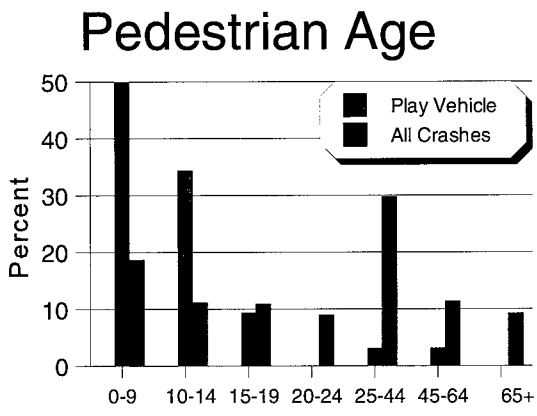
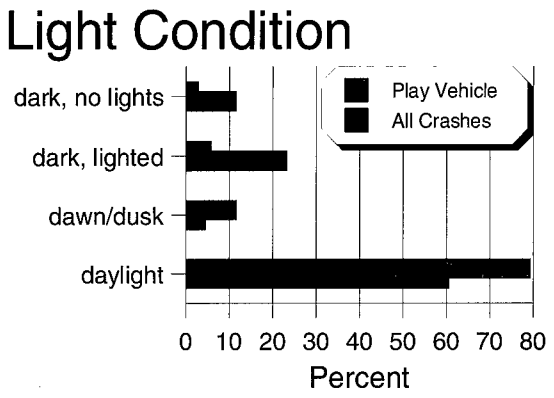
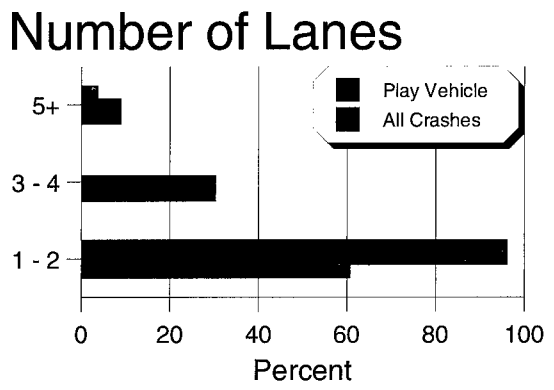


Figure 20. Pedestrian age in "Play Vehicle Related."





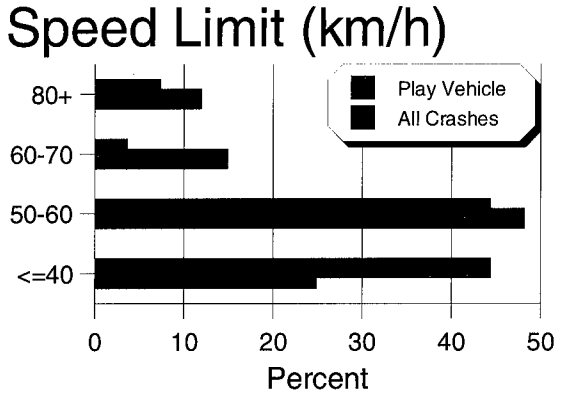


Figure 21. Light condition, number of lanes, and speed limit in "Play Vehicle Related."

Alcohol use

Pedestrian	0%
Driver	0%

Development Character

Urban	53%
Rural	47%

Day of Week

Weekday	68%
Weekend	32%

Road Feature

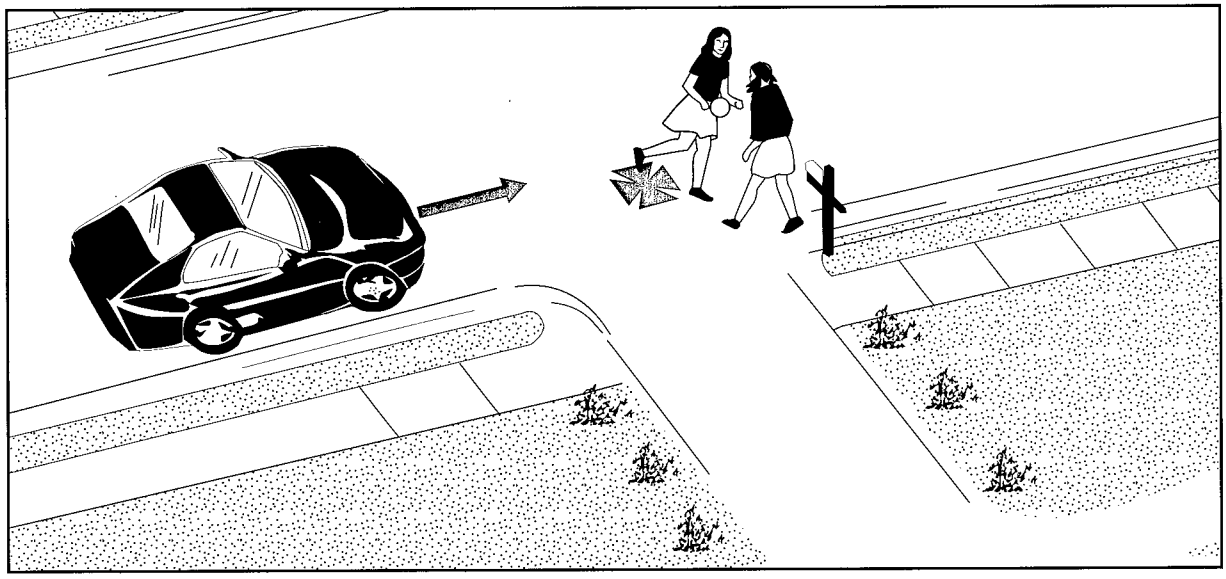
No special feature	47%
Intersection	24%
Private driveway	15%
Alley	6%
All other	9%

Pedestrian Location

Travel lane	91%
Alley/Driveway	3%
Parking lot lanes	3%
Ped/Multi-use path	3%

Playing In Roadway

Frequency: 48 cases; 0.9% of all crashes
Severity: 30% resulted in serious or fatal injuries



Description: The pedestrian was struck while playing on foot in the roadway prior to the vehicle's appearance.

Summary: In comparison to all crashes, this crash was more likely to involve child (age 0 to 9) and youth (age 10 to 14) pedestrians.

Dawn/dusk was overrepresented with 15 percent of occurrences. Almost all took place on roads with 1 to 2 lanes, and roads with a speed limit <=40 km/h were strongly overrepresented.

Alcohol was generally not a factor in these crashes.

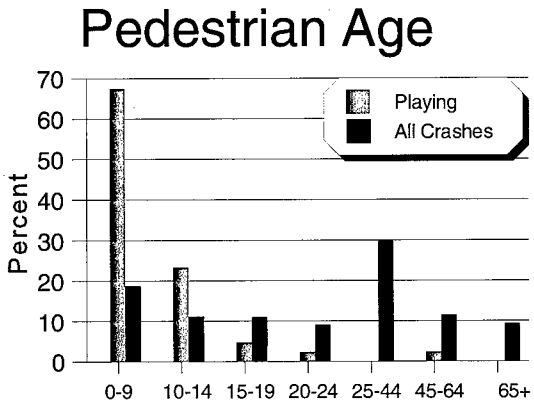
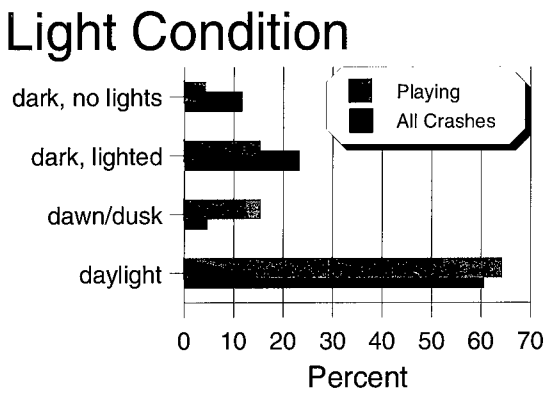
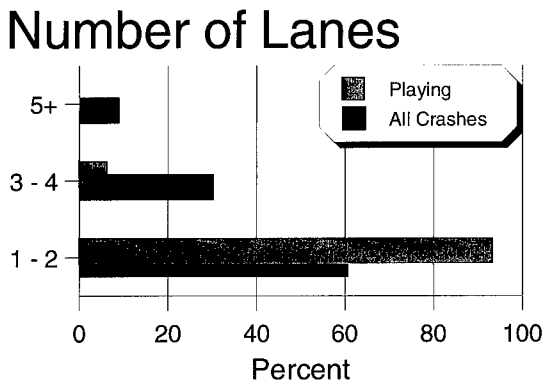
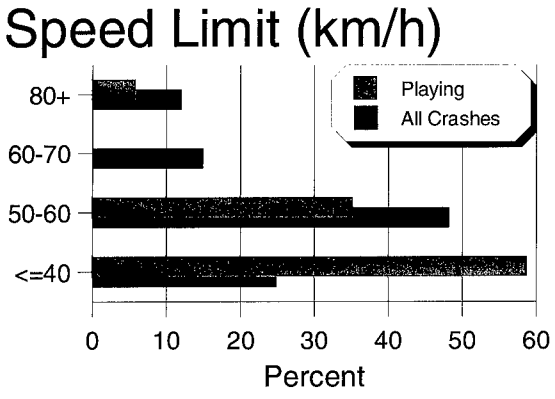


Figure 22. Pedestrian age in "Playing In Roadway."







Alcohol use

Pedestrian	3%
Driver	2%

Development Character

Urban	69%
Rural	31%

Day of Week

Weekday	68%
Weekend	32%

Road Feature

No special feature	71%
Intersection	24%
Private driveway	5%

Pedestrian Location

Travel lane	90%
All other	10%

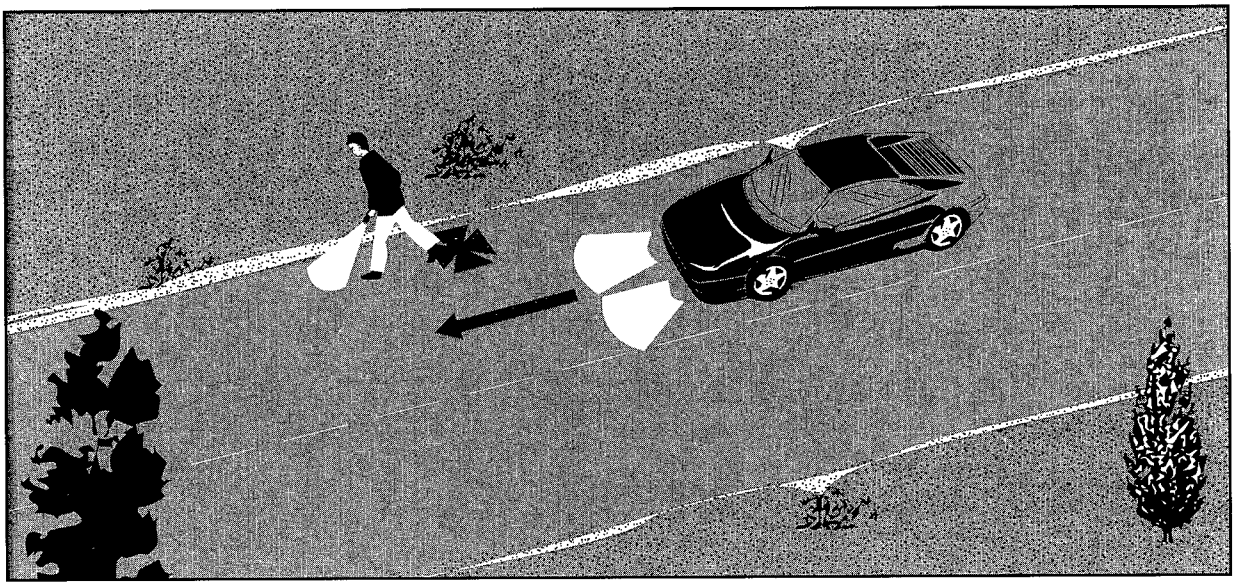
Figure 23. Light condition, number of lanes, and speed limit in "Playing In Roadway."

Pedestrian-Motor Vehicle Crash Types

Walking Along Road/ Crossing Expressway

Walking Along Road

Frequency: 375 cases; 7.4% of all crashes
Severity: 37% resulted in serious or fatal injuries



Description: The pedestrian was struck while walking (or running) along a road without sidewalks. The pedestrian may have been:

- hitchhiking (15 cases);
- walking **with** traffic and struck from behind (257 cases) or from the front (5 cases);
- walking **against** traffic and struck from behind (76 cases) or from the front (7 cases);
- walking along a road, but the details are unknown (15 cases).

Summary: In comparison to all crashes, this crash was more likely to involve teen (age 15 to 19), young adult (age 20 to 24), and adult (age 25 to 44) pedestrians.

About 40 percent occurred during dark, no lights conditions. Almost 80 percent were on 1 to 2 lane roads and more than 30 percent on roads with a speed limit of 80+ km/h. Twenty-eight percent of pedestrians had been drinking.

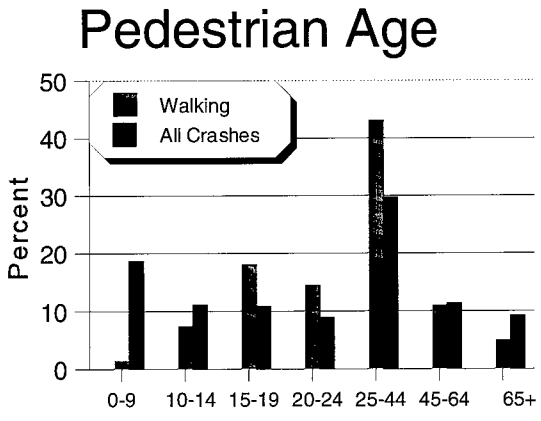
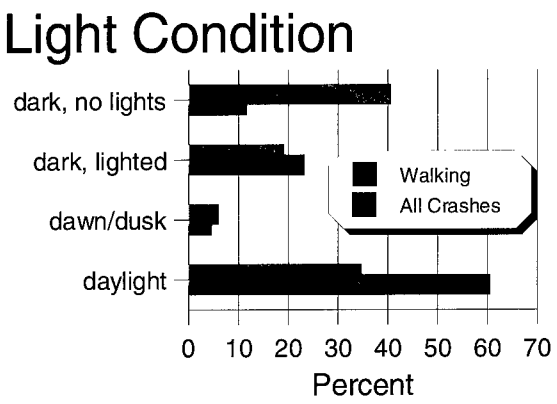
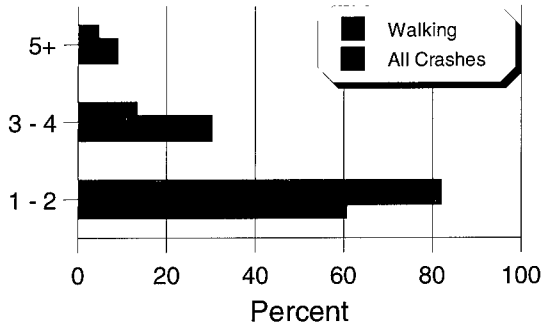


Figure 24. Pedestrian age in "Walking Along Road."





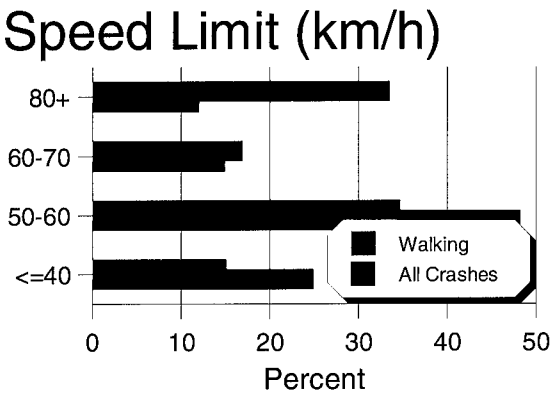


Figure 25. Light condition, number of lanes, and speed limit in "Walking Along Road."

Alcohol use

Pedestrian	28%
Driver	9%

Development Character

Urban	56%
Rural	44%

Day of Week

Weekday	56%
Weekend	44%

Road Feature

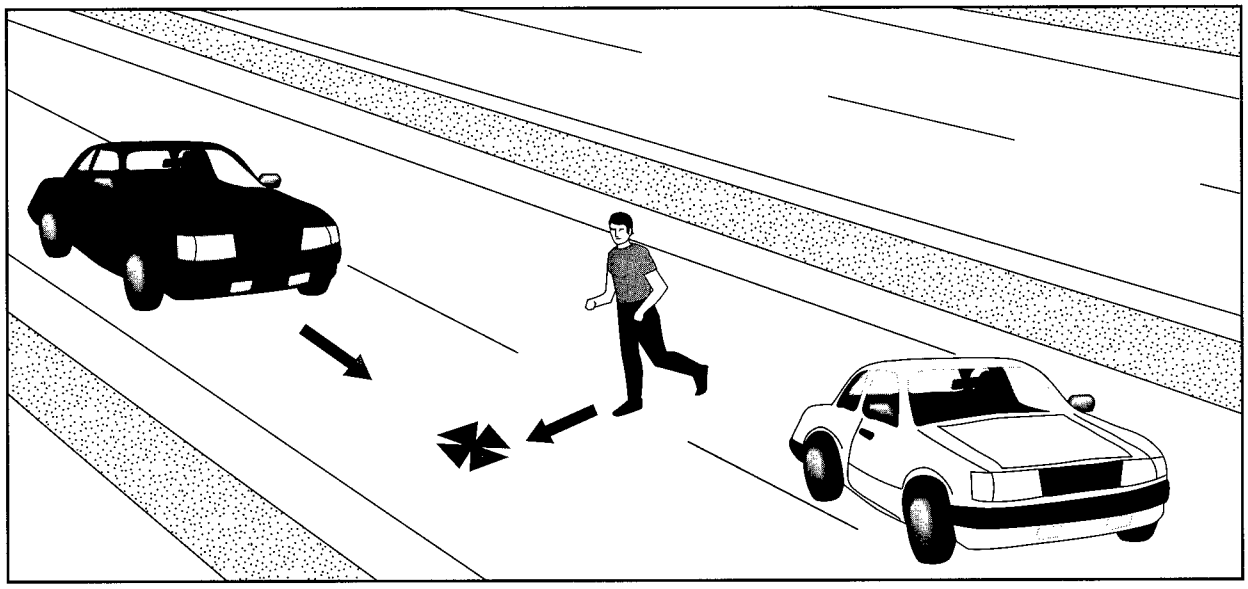
No special feature	87%
Intersection	8%
Public driveway	2%
Private driveway	1%
Alley	0%
All other	2%

Pedestrian Location

Travel lane	50%
Edge of lane	23%
Shoulder	21%
All other	6%

Expressway Crossing

Frequency: 25 cases; 0.5% of all crashes
Severity: 84% resulted in serious or fatal injuries



Description: The pedestrian was struck while attempting to cross a limited access expressway.

Summary: This crash did not involve child (ages 0 to 9) or youth (age 10 to 14) pedestrians. Adult (age 25 to 44) and middle adult (age 45 to 64) pedestrians were strongly overrepresented in this crash type.

More than 80 percent occurred under dark conditions and on roads with a speed limit of 80+ km/h. Almost all occurred on multilane roads.

Almost half of the pedestrians had been drinking.

"Expressway Crossing" crashes were much more severe than the average.

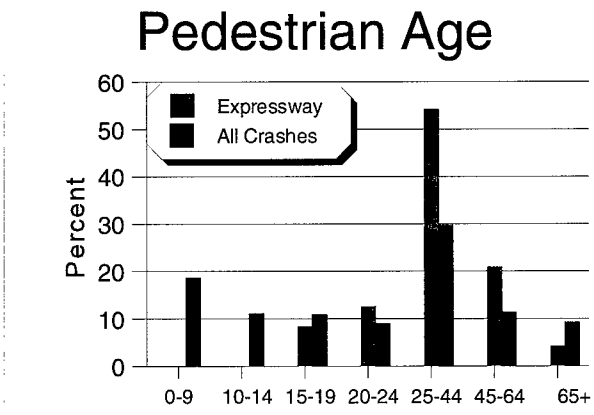
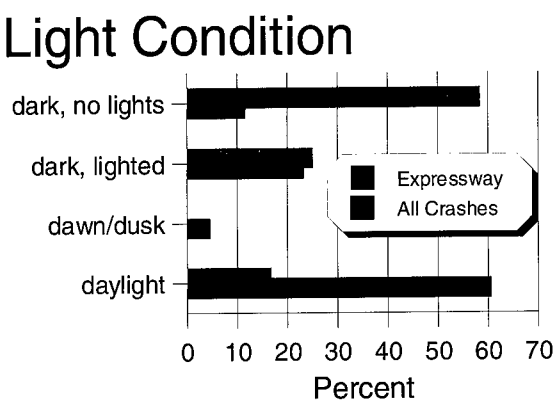
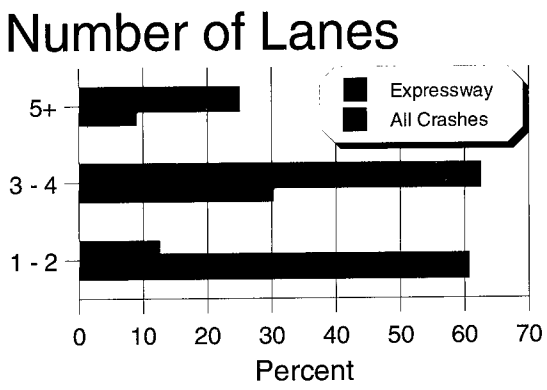


Figure 26. Pedestrian age in "Expressway Crossing."





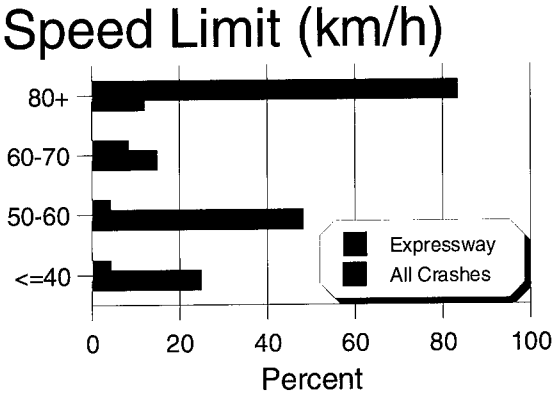


Figure 27. Light condition, number of lanes, and speed limit in "Expressway Crossing."

Alcohol use

Pedestrian 48%
Driver 4%

Development Character

Urban 64%
Rural 36%

Day of Week

Weekday 56%
Weekend 44%

Road Feature

No special feature . . 94%
All other 6%

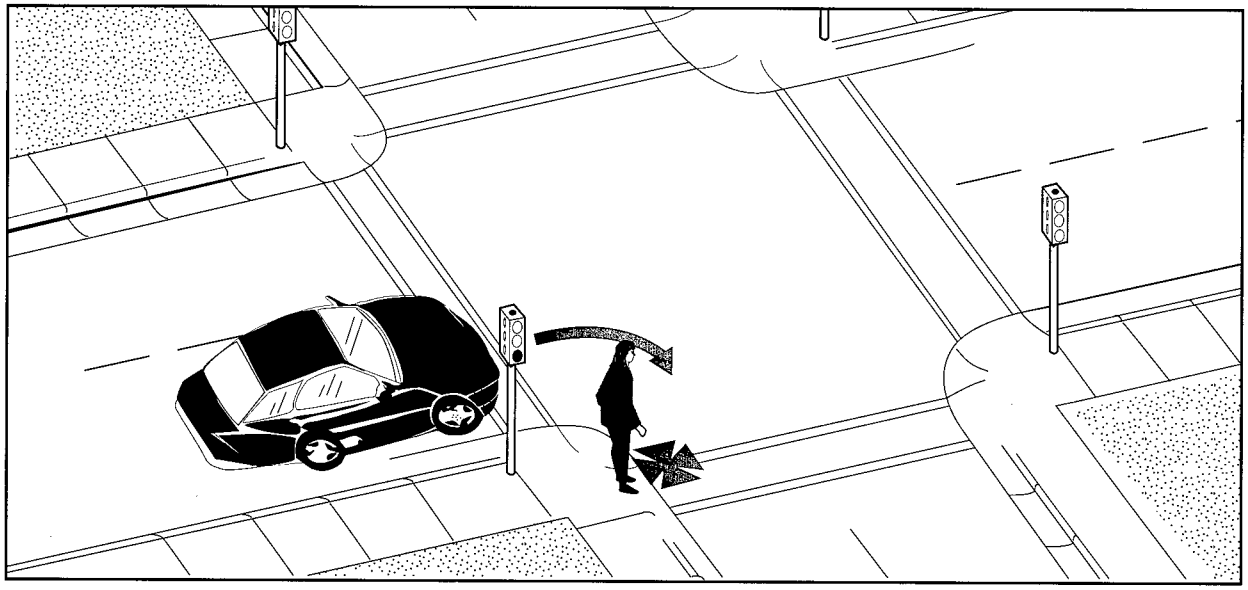
Pedestrian Location

Travel lane 96%
Median 4%

Not In Road

Waiting To Cross

Frequency: 32 cases; 0.7% of all crashes
Severity: 32% resulted in serious or fatal injuries



Description: The pedestrian was struck while standing at or near the curb or roadway edge waiting to cross.

Summary: In comparison to all crashes, this crash was more likely to involve teen (age 15 to 19), adult (age 25 to 44), and middle adult (age 45-64) pedestrians.

Fifty-six percent of the striking vehicles were turning.

This crash tended to occur on lower speed roads and on 1 to 2 lane roads. The pedestrian was most often standing on a sidewalk (38 percent) or shoulder (31 percent).

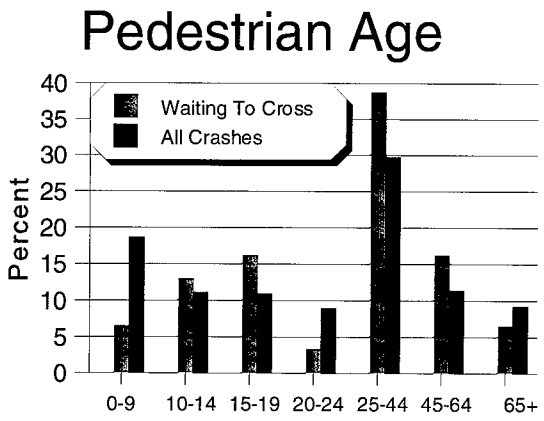
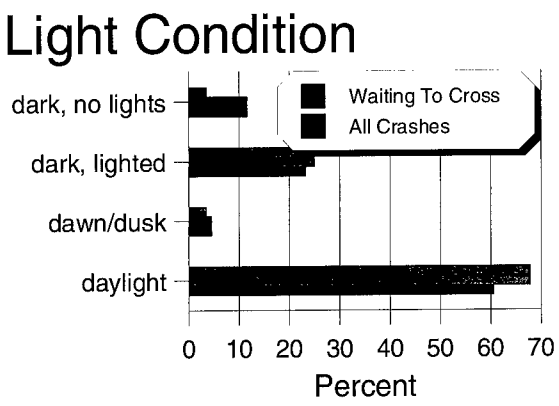
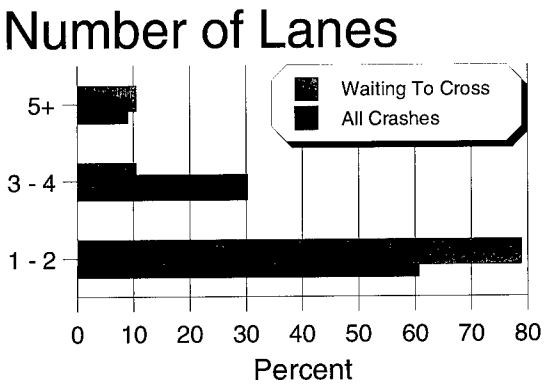


Figure 28. Pedestrian age in "Waiting To Cross."





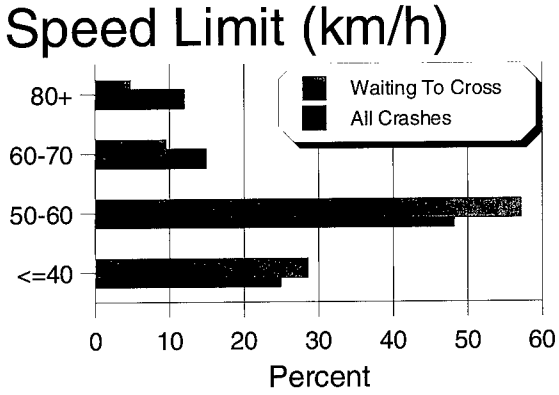


Figure 29. Light condition, number of lanes, and speed limit in "Waiting To Cross."

Alcohol use

Pedestrian	12%
Driver	8%

Development Character

Urban	68%
Rural	32%

Day of Week

Weekday	55%
Weekend	45%

Road Feature

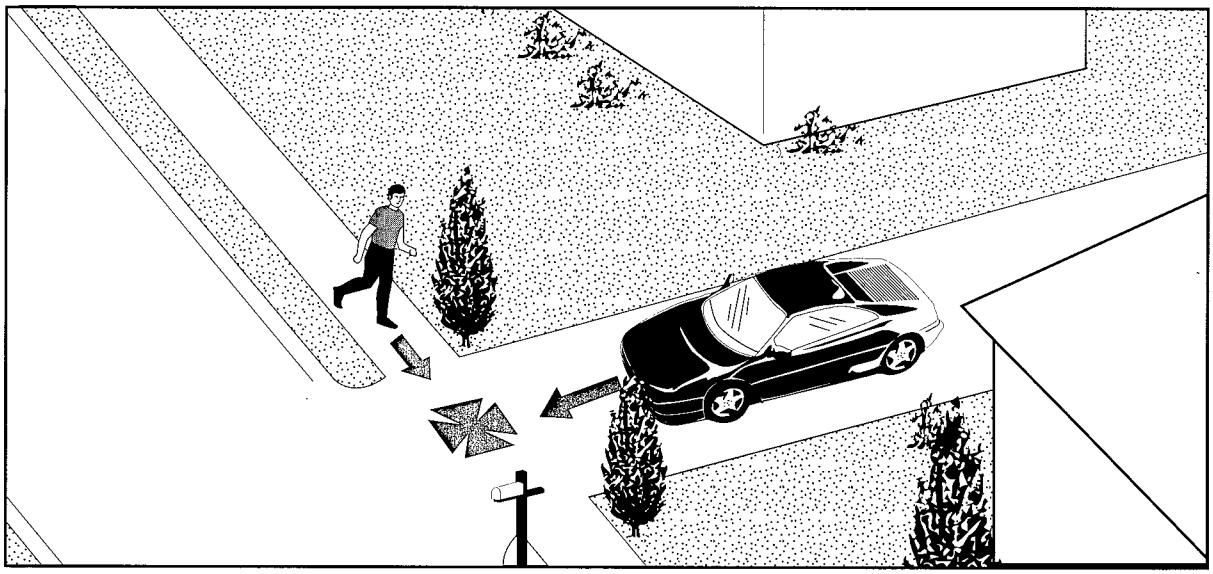
Intersection	59%
No special feature	11%
Public driveway	11%
Alley	4%
All other	15%

Pedestrian Location

Sidewalk	38%
Shoulder	31%
Travel lane	18%
All other	13%

Not In Roadway

Frequency: 404 cases; 7.9% of all crashes
Severity: 28% resulted in serious or fatal injuries



Description: The pedestrian was struck when not in the roadway. Areas included parking lots, driveways, private roads, sidewalks, service stations, yards, etc.

Summary: The pedestrian age profile for this crash closely followed that of all crashes.

In 84 percent of the cases, both the pedestrian and the vehicle were not initially in the roadway. The other 16 percent involved a vehicle that was on the roadway, but left it and struck the pedestrian. *Note: The Road Feature bullet box depicts data for these "left the roadway" events.*

More than half of the pedestrians were in a parking lot location. *Note: Other crash types, in particular "Driverless Vehicle" and "Backing," may also have occurred in an off-road location.*

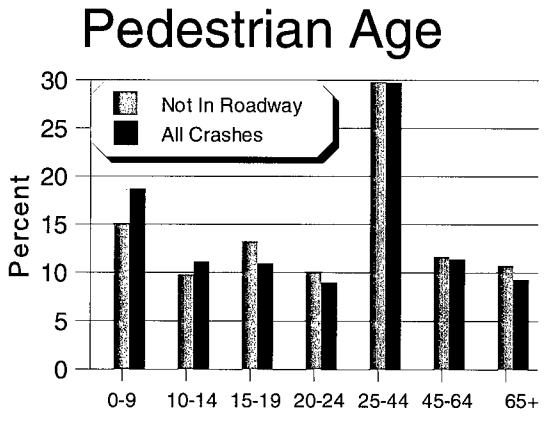
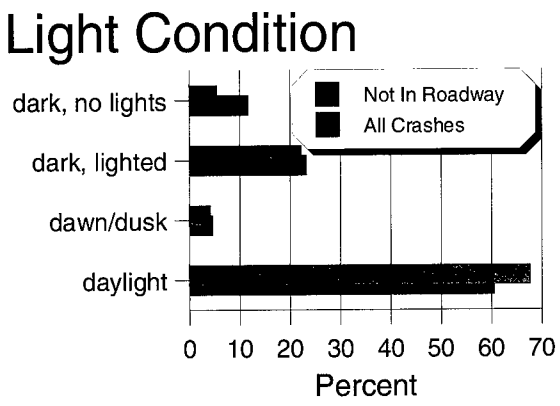


Figure 30. Pedestrian age in "Not In Roadway."



Number of Lanes and Speed Limit graphs are not shown because these variables are not relevant to this crash type.

Alcohol use

Pedestrian	11%
Driver	7%

Development Character

Urban	63%
Rural	37%

Day of Week

Weekday	63%
Weekend	37%

Road Feature

Public driveway	15%
No special feature	11%
Private driveway	6%
All other	66%

Pedestrian Location

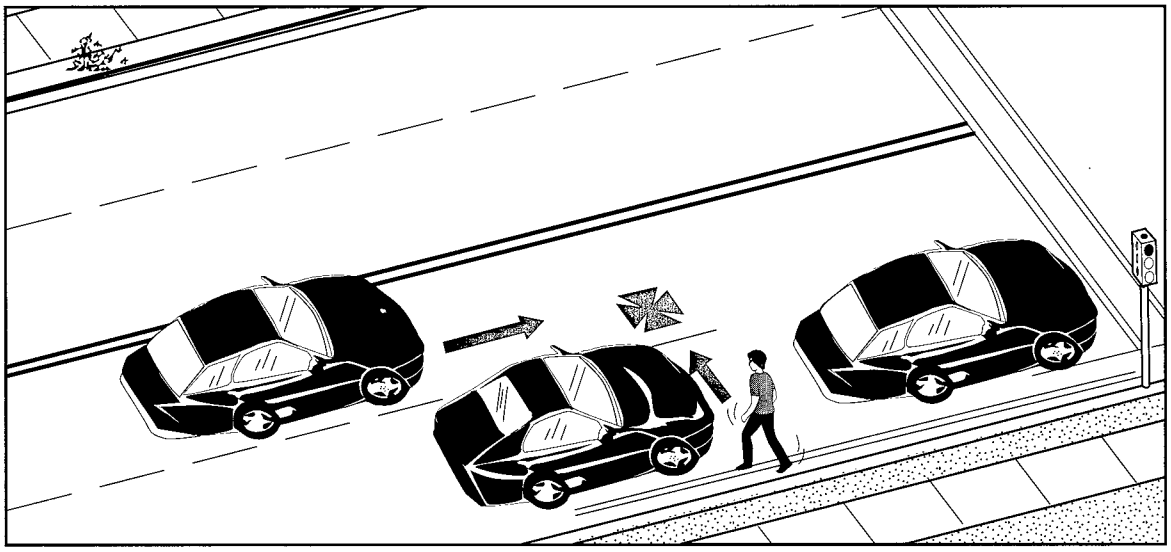
Parking lot lanes	28%
Parking lot space	16%
Alley/Driveway	16%
Sidewalk	15%
Parking lot, other	9%
All other	16%

Figure 31. Light condition in "Not In Roadway."

Intersection Related

Multiple Threat At Intersection

Frequency: 64 cases; 1.3% of all crashes
Severity: 28% resulted in serious or fatal injuries



Description: At an intersection, the pedestrian entered the traffic lane in front of standing or stopped traffic and was struck by another vehicle traveling in the same direction as the stopped traffic.

Summary: In comparison to all crashes, this crash was more likely to involve youth (age 10 to 14) and teen (age 15 to 19) pedestrians.

More than 80 percent occurred under daylight conditions.

Nearly three-fourths occurred on multilane roads and almost 80 percent on roads with a speed limit between 50 and 70 km/h.

This crash was slightly less severe than the average.

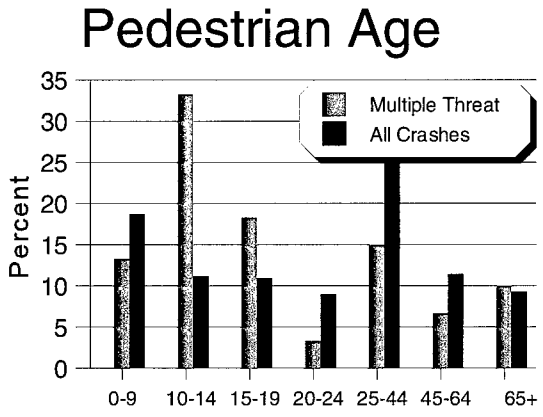
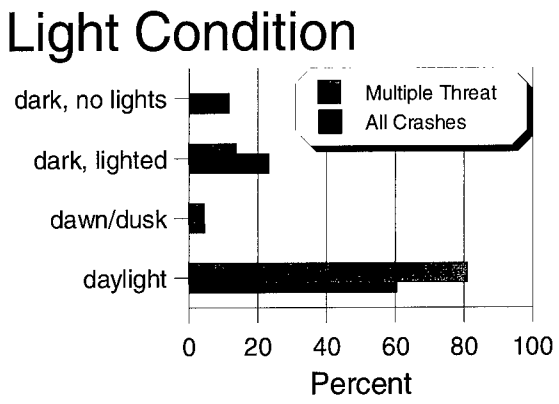
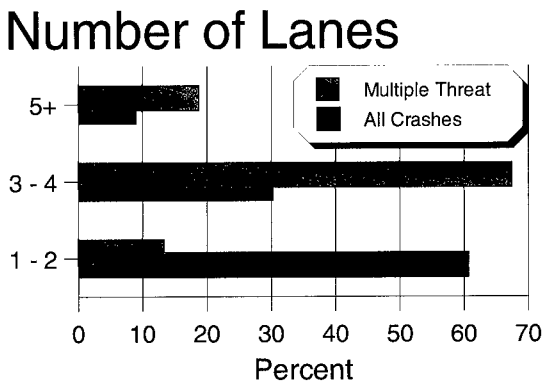


Figure 32. Pedestrian age in "Multiple Threat At Intersection."





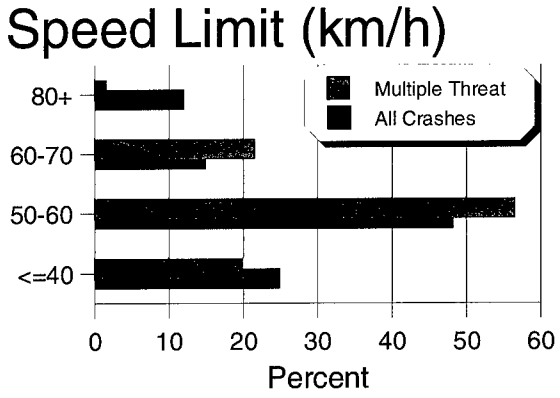


Figure 33. Light condition, number of lanes, and speed limit in "Multiple Threat At Intersection."

Alcohol use

Pedestrian 4%
Driver 0%

Development Character

Urban 70%
Rural 30%

Day of Week

Weekday 75%
Weekend 25%

Road Feature

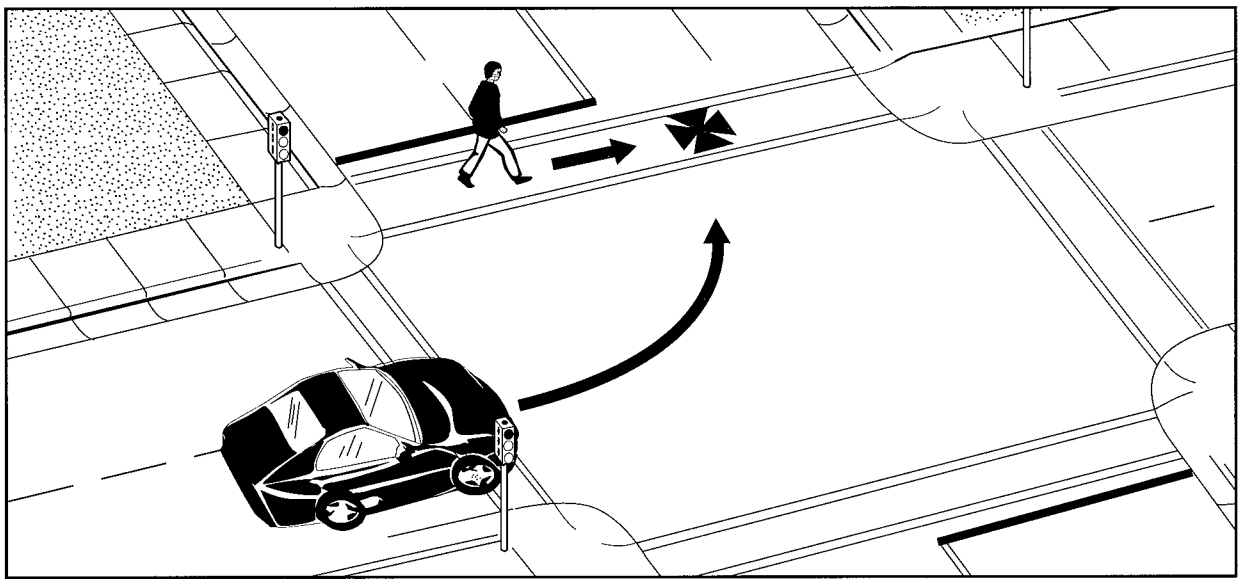
Intersection 100%

Pedestrian Location

Travel lane 100%

Vehicle Turn/Merge

Frequency: 497 cases; 9.8% of all crashes
Severity: 18% resulted in serious or fatal injuries



Description: The pedestrian and vehicle collided while the vehicle was preparing to turn, in the process of turning, or had just completed a turn (or merge).

Summary: In comparison to all crashes, this crash was more likely to involve adult pedestrians ages 25 and above.

This was largely an urban event (77%).

It was more likely to occur on 3 to 4 lane roads and on roads with speed limits of 50 to 60 km/h.

"Vehicle Turn/Merge" crashes were less severe than the average.

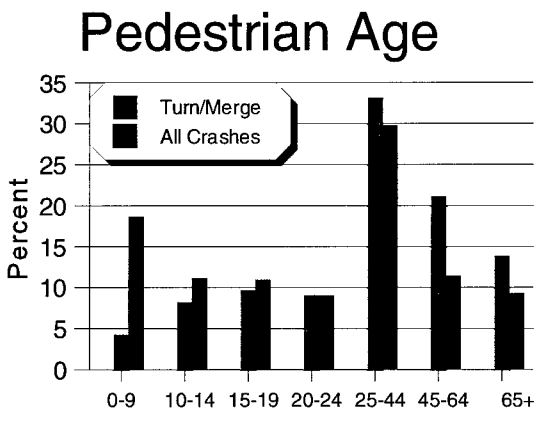
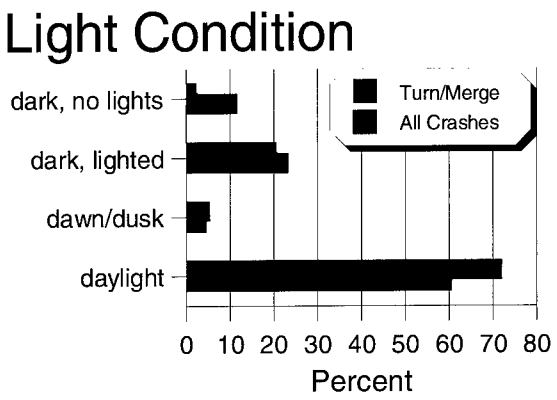
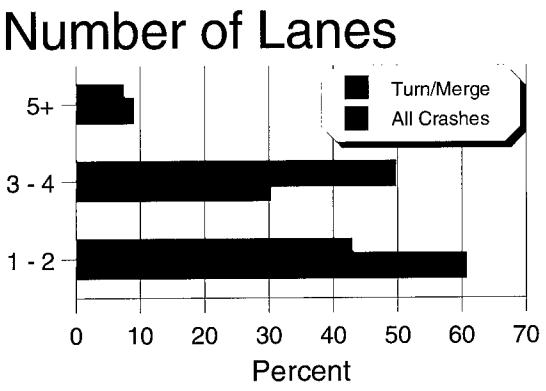


Figure 34. Pedestrian age in "Vehicle Turn/Merge."





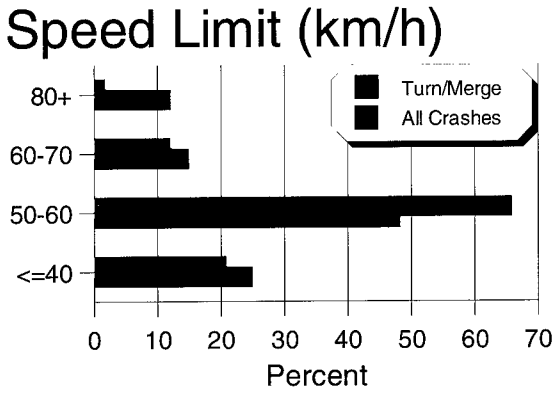


Figure 35. Light condition, number of lane, and speed limit in "Vehicle Turn/Merge."

Alcohol use

Pedestrian	5%
Driver	3%

Development Character

Urban	77%
Rural	23%

Day of Week

Weekday	77%
Weekend	23%

Road Feature

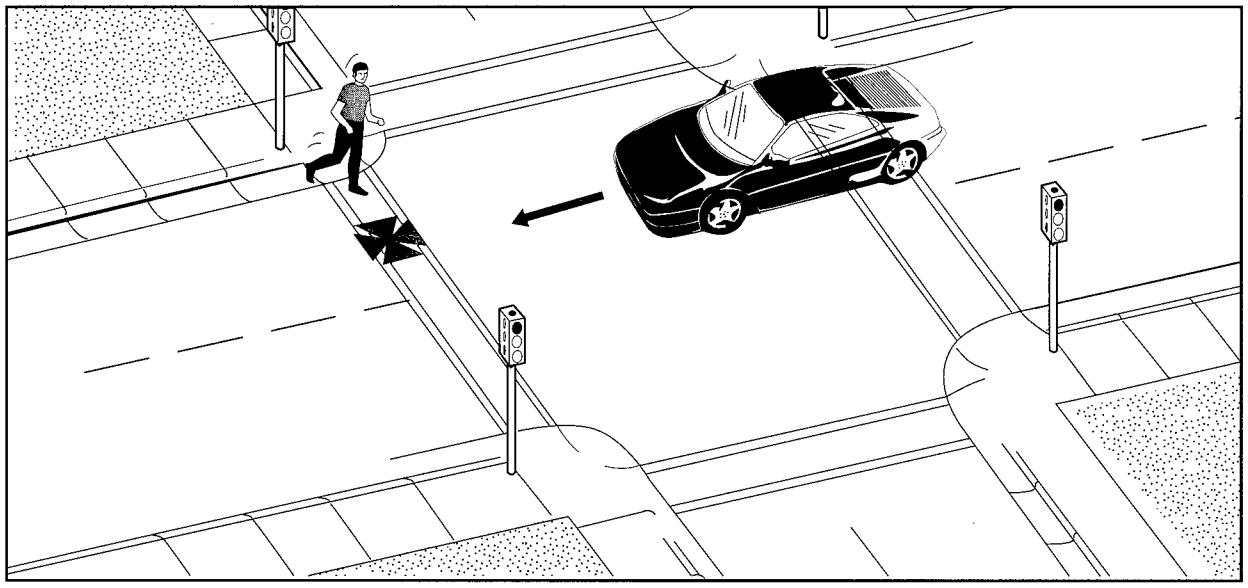
Intersection	96%
All other	4%

Pedestrian Location

Travel lane	99%
Median	1%

Intersection Dash

Frequency: 363 cases; 7.2% of all crashes
Severity: 34% resulted in serious or fatal injuries



Description: The pedestrian was struck while running through an intersection and/or the motorist's view of the pedestrian was blocked until an instant before impact.

Summary: In comparison to all crashes, this crash was much more likely to involve child (age 0 to 9) and youth (age 10 to 14) pedestrians.

More than 70 percent occurred under daylight conditions. Overall 9 percent of the pedestrians had been drinking, but 48 percent of those ages 25 to 44.

The "Number of Lanes" and "Speed Limit" variables were typical of all crashes, with greatest numbers occurring on 1 to 2 lane and 50 to 60 km/h roads.

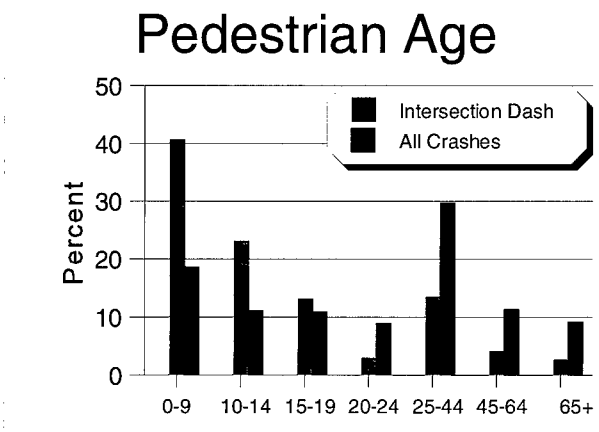
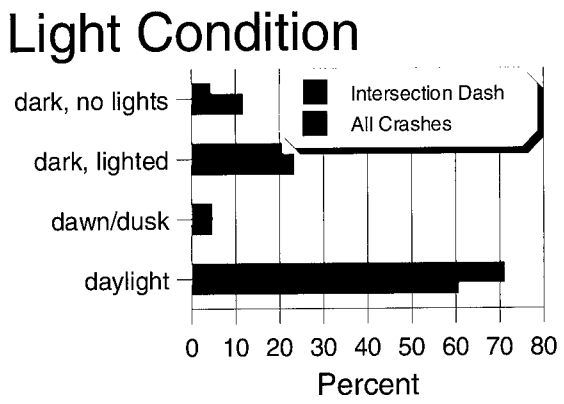
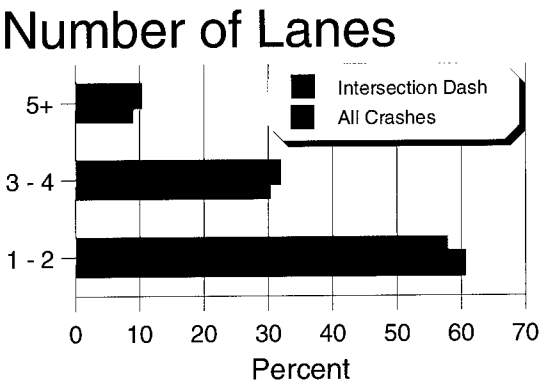


Figure 36. Pedestrian age in "Intersection Dash."





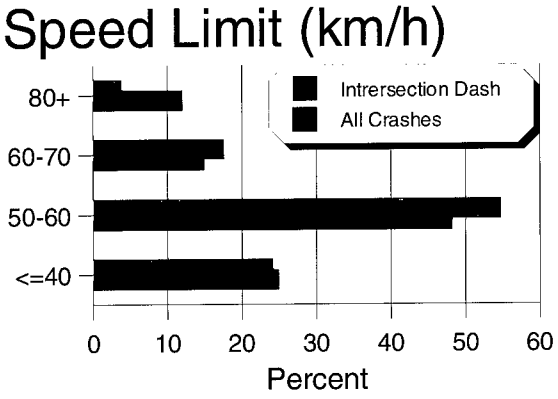


Figure 37. Light condition, number of lanes, and speed limit in "Intersection Dash."

Alcohol use

Pedestrian 9%
Driver 3%

Development Character

Urban 71%
Rural 29%

Day of Week

Weekday 66%
Weekend 34%

Road Feature

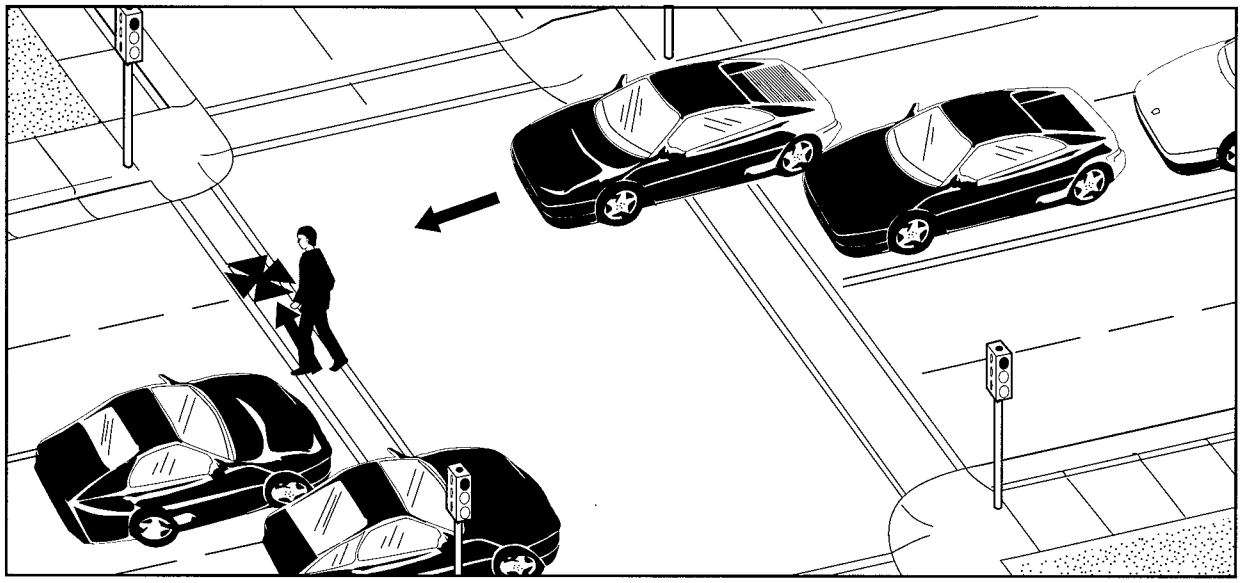
Intersection 100%

Pedestrian Location

Travel lane 100%

Trapped

Frequency: 41 cases; 0.8% of all crashes
Severity: 12% resulted in serious or fatal injuries



Description: The pedestrian was struck while crossing at a signalized intersection when the light changed and traffic started moving.

Summary: In comparison to all crashes, this crash was more likely to involve youth (age 10 to 14) and elderly (age 65+) pedestrians.

Multilane roads were stongly overrepresented in this crash type.

"Trapped" crashes were much less likely to result in serious injury than average.

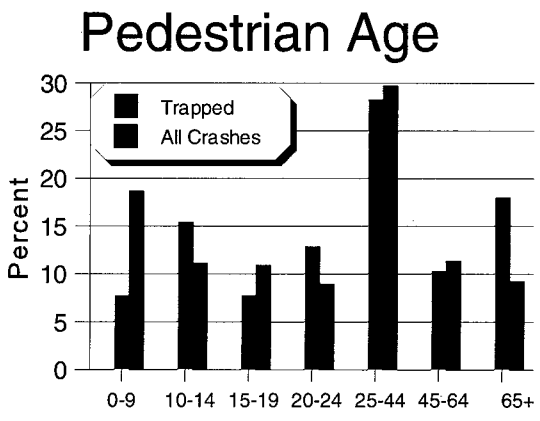
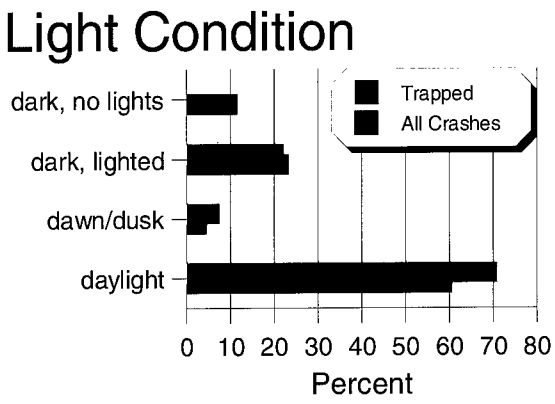
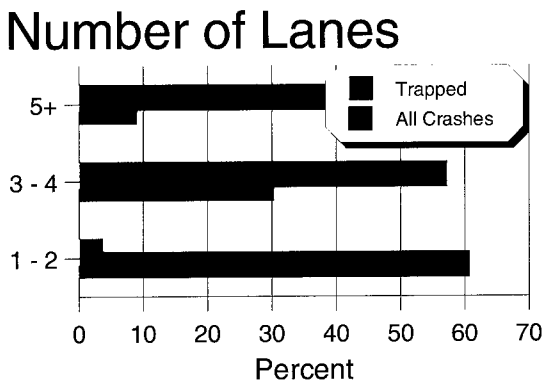


Figure 38. Pedestrian age in "Trapped."





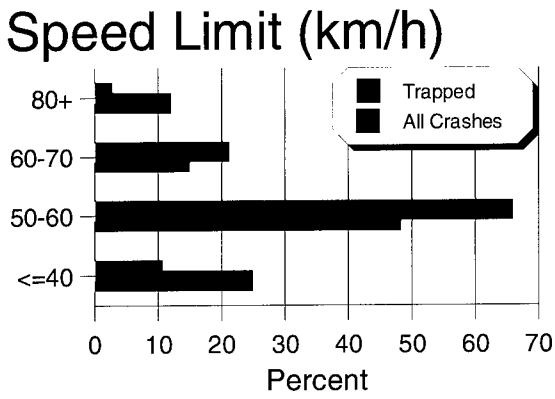


Figure 39. Light condition, number of lane, and speed limit in "Trapped."

Alcohol use

Pedestrian 0%
Driver 3%

Development Character

Urban 66%
Rural 34%

Day of Week

Weekday 76%
Weekend 24%

Road Feature

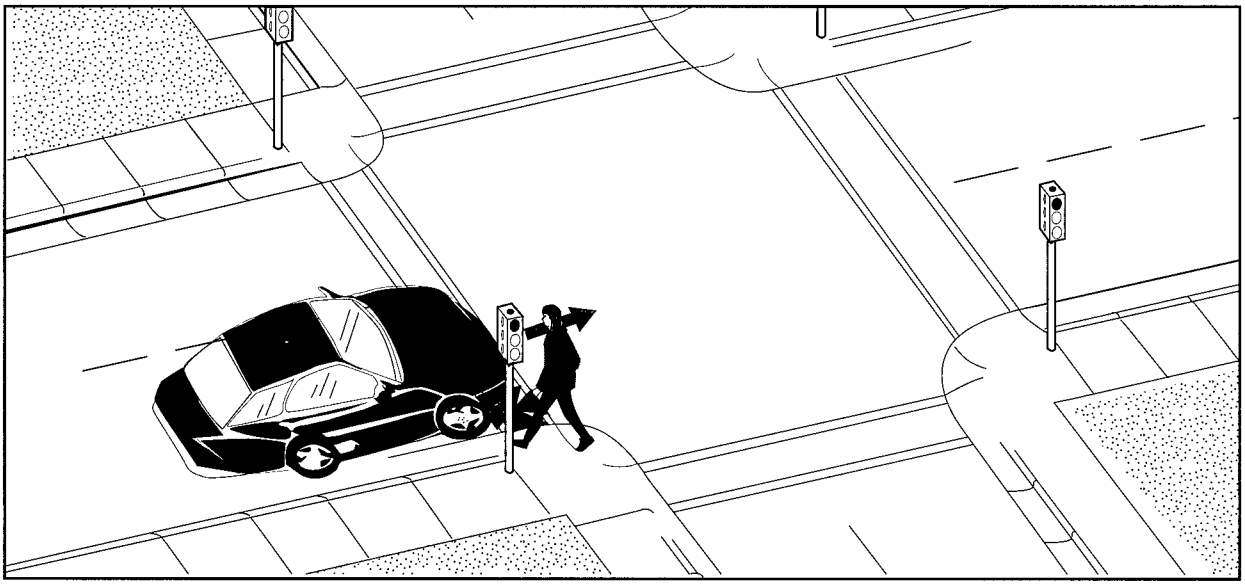
Intersection 100%

Pedestrian Location

Travel lane 100%

Walked Into Vehicle At Intersection

Frequency: 42 cases; 0.9% of all crashes
Severity: 20% resulted in serious or fatal injuries



Description: The pedestrian walked into (i.e., struck) the vehicle at an intersection. The pedestrian may have stepped into the travel lane and instaneously collided with the vehicle (13 cases), or may have been walking in the lane prior to colliding with the vehicle (11 cases) (18 cases were undetermined).

Summary: The age profile for this crash generally followed that of all crashes combined.

Almost half the crashes occurred on 3 to 4 lane roads. Most occurred on 50 to 60 km/h roads, but more than a fourth took place on 60 to 70 km/h roads.

Overall, 38 percent of the pedestrians had been drinking. Thirteen of the 21 (62 percent) pedestrians age 20 to 64 had been drinking.

A lower percentage than average were seriously injured or killed.

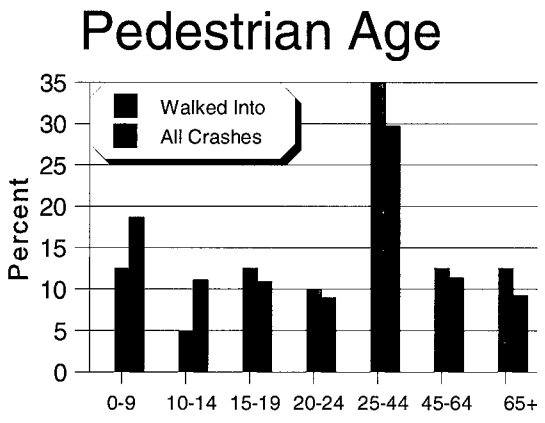
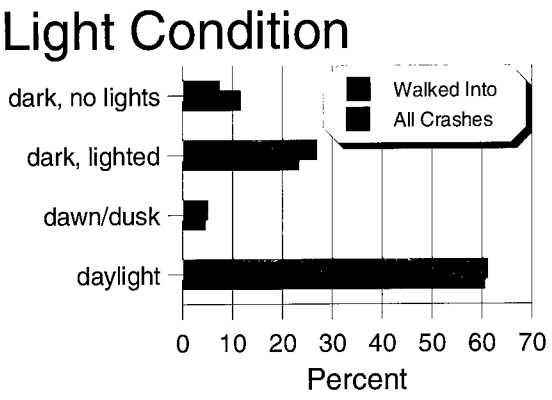
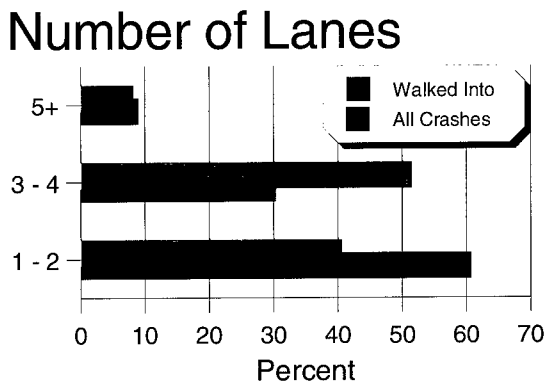


Figure 40. Pedestrian age in "Walked Into Vehicle At Intersection."





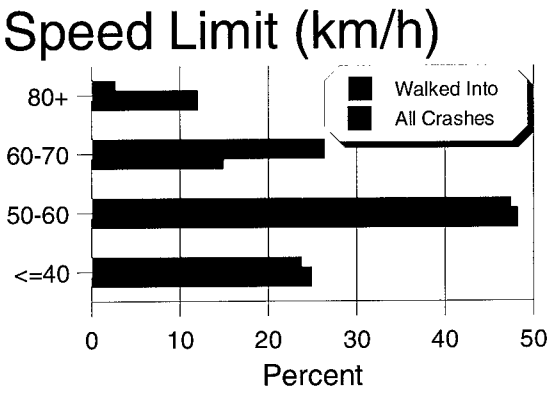


Figure 41. Light condition, number of lanes, and speed limit in "Walked Into Vehicle At Intersection."

Alcohol use

Pedestrian	38%
Driver	3%

Development Character

Urban	73%
Rural	27%

Day of Week

Weekday	73%
Weekend	27%

Road Feature

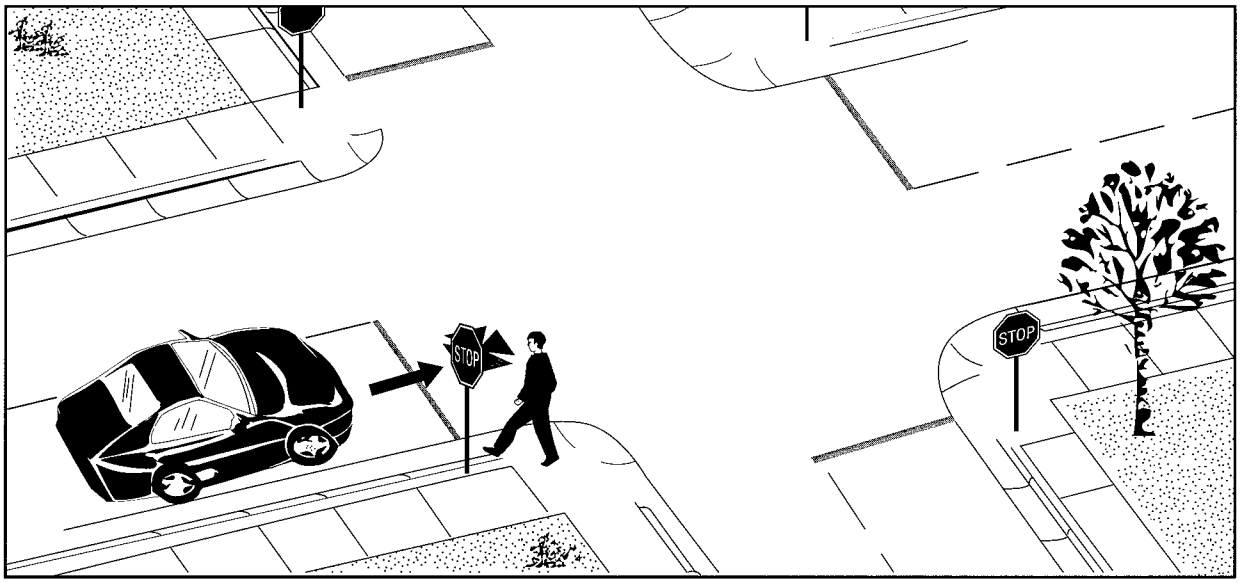
Intersection	97%
Public driveway	3%

Pedestrian Location

Travel lane	100%

Driver Violation At Intersection

Frequency: 259 cases; 5.1% of all crashes
Severity: 28% resulted in serious or fatal injuries



Description: The pedestrian was struck by a vehicle proceeding straight ahead and the report indicated that the driver committed a violation such as careless driving, failed to yield, signal/sign violation, speeding, or DWI, etc.

Summary: The age profile for this crash generally followed that of all crashes combined, though child (age 0 to 9) pedestrians were less likely to be involved.

Eighty percent occurred in urban areas, and lower speed roads were slightly overrepresented.

This crash resulted in somewhat less serious injuries than average.

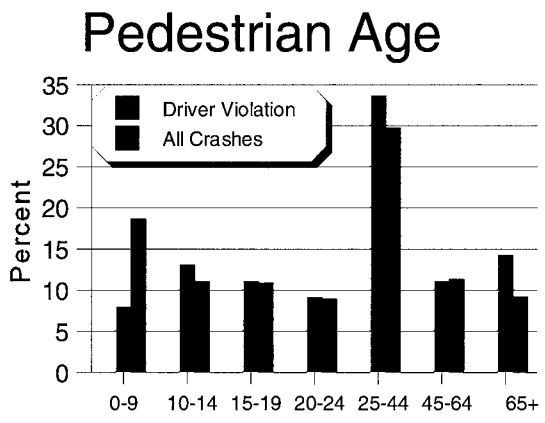
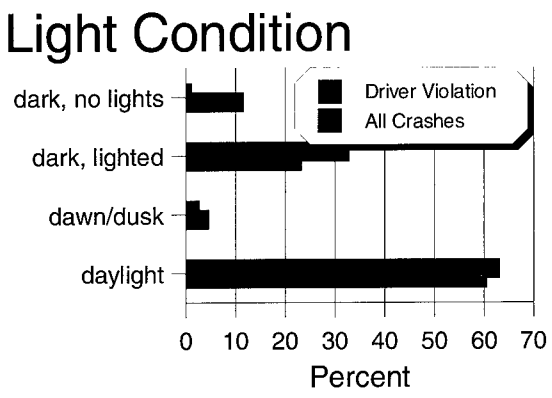
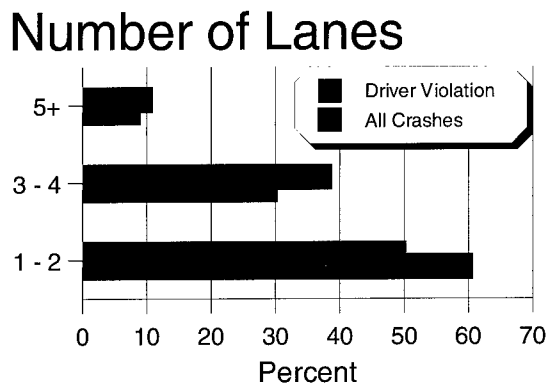


Figure 42. Pedestrian age in "Driver Violation At Intersection."





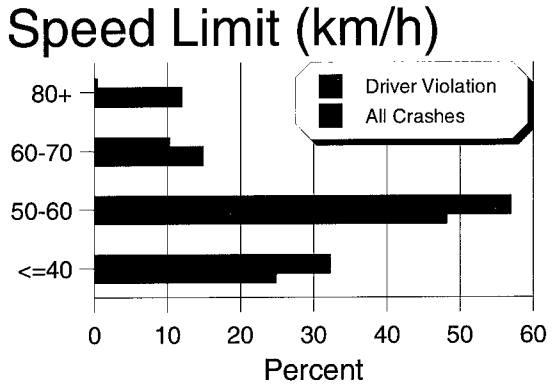


Figure 43. Light condition, number of lanes, and speed limit in "Driver Violation At Intersection."

Alcohol use

Pedestrian 8%
Driver 5%

Development Character

Urban 80%
Rural 20%

Day of Week

Weekday 74%
Weekend 26%

Road Feature

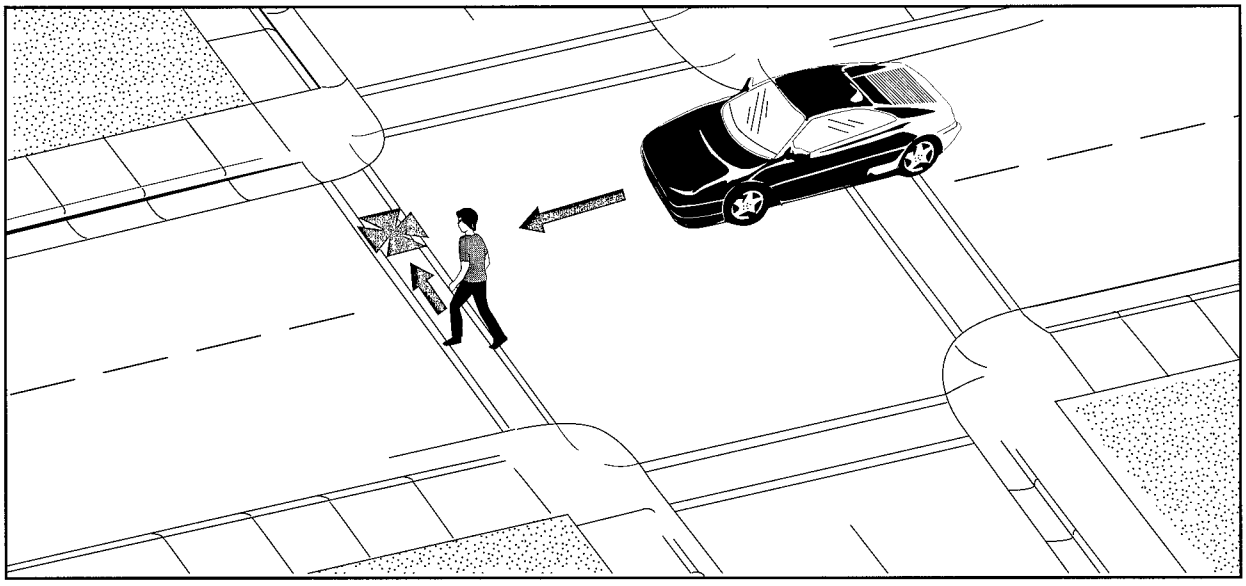
Intersection 100%

Pedestrian Location

Travel lane 100%

Intersection—Other

Frequency: 364 cases; 7.2% of all crashes
Severity: 42% resulted in serious or fatal injuries



Description: The crash occurred at an intersection but does not conform to any of the specified crash types.

Summary: In comparison to all crashes, this crash was **less** likely to involve child (age 0 to 9) pedestrians.

Forty-four percent of the involved pedestrians had been walking in the travel lane prior to impact, 4 percent had been standing in the roadway, 16 percent stepped into the travel lane and were instantaneously struck, and 7 percent misjudged the crossing gap. Thirty percent were undetermined.

More than 40 percent occurred under dark, lighted conditions. Multilane roads were also overrepresented.

Forty-two percent of pedestrians ages 25 to 64 had been drinking. These crashes were more severe than the average.

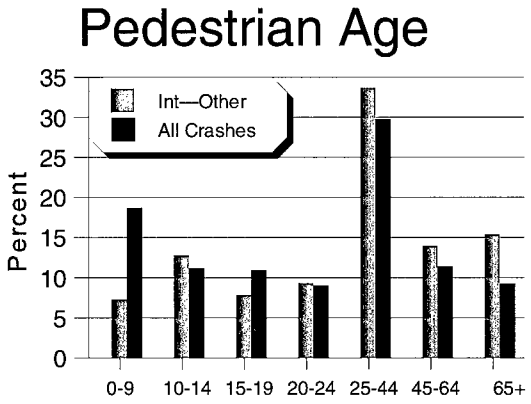
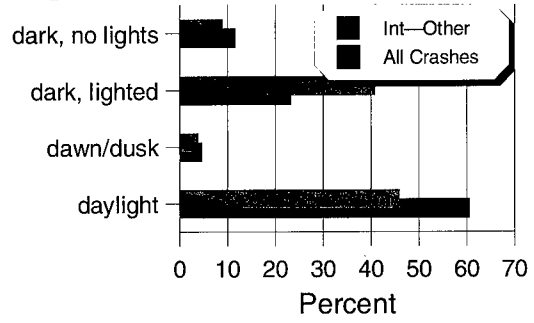
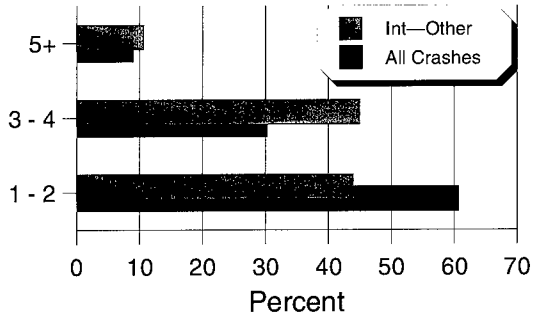


Figure 44. Pedestrian age in "Intersection—Other."

Light Condition



Number of Lanes



Speed Limit (km/h)

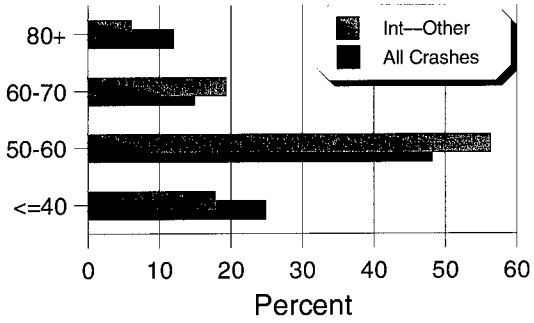


Figure 45. Light condition, number of lanes, and speed limit in "Intersection—Other."

Alcohol use

Pedestrian 27%
Driver 5%

Development Character

Urban 73%
Rural 27%

Day of Week

Weekday 74%
Weekend 26%

Road Feature

Intersection 100%

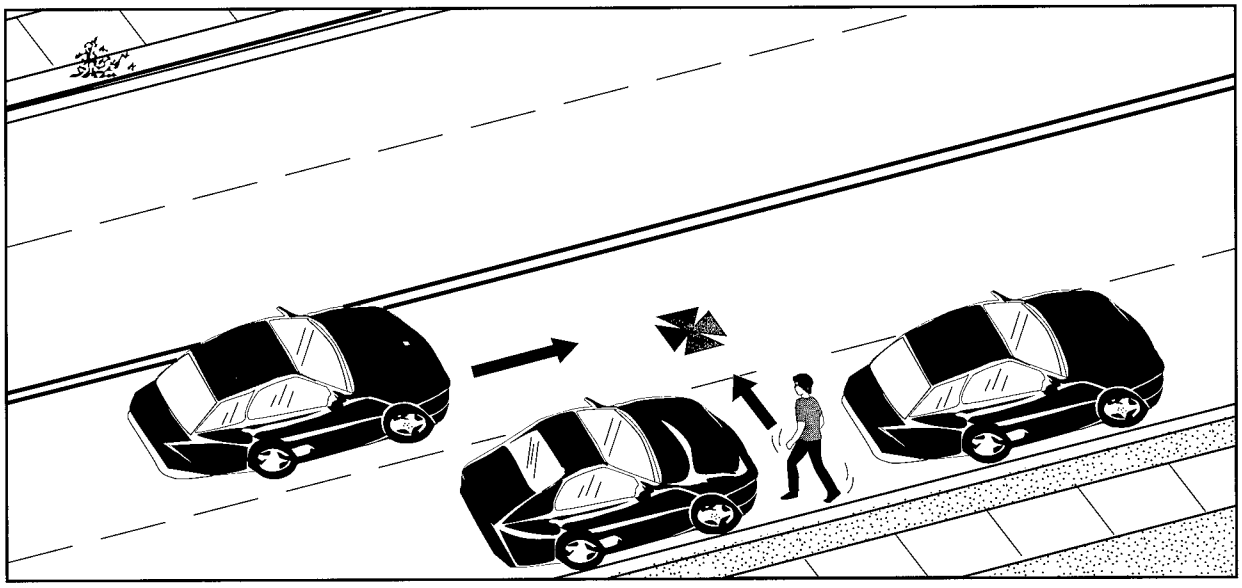
Pedestrian Location

Travel lane 100%

Midblock Related

Multiple Threat At Midblock

Frequency: 46 cases; 0.9% of all crashes
Severity: 41% resulted in serious or fatal injuries



Description: The pedestrian entered the traffic lane at midblock in front of standing or stopped traffic and was struck by another vehicle moving in the same direction as the stopped traffic.

Summary: In comparison to all crashes, this crash was more likely to involve youth (age 10 to 14) pedestrians.

Almost 90 percent occurred under daylight conditions.

Multilane roads were, by definition, strongly overrepresented. This was also very likely to be a weekday rather than weekend event.

Alcohol was generally not a factor.

This crash tended to be more serious than the average.

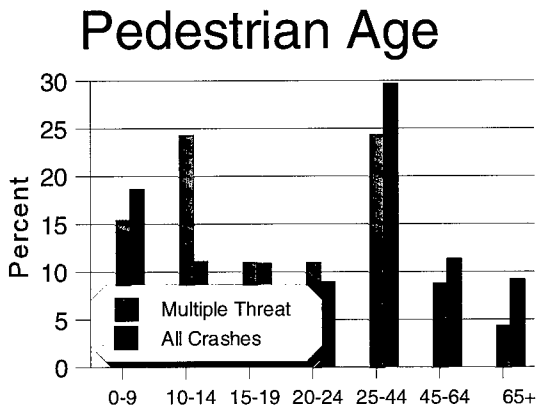
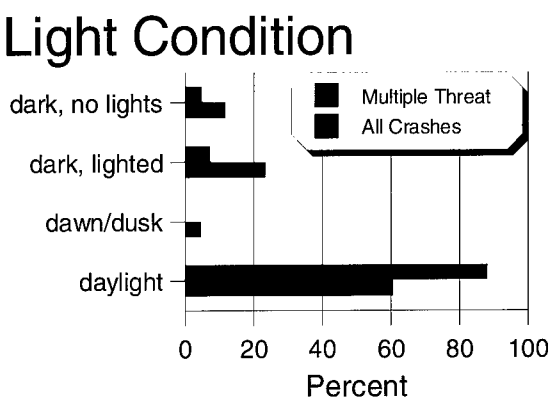
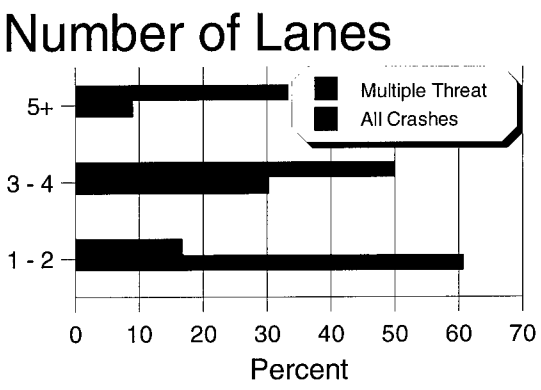


Figure 46. Pedestrian age in "Multiple Threat At Midblock."





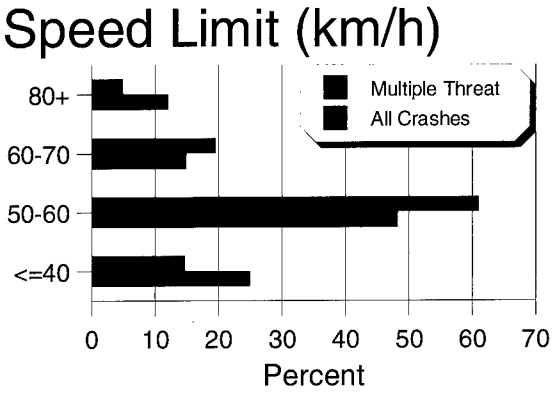


Figure 47. Light condition, number of lanes, and speed limit in "Multiple Threat At Midblock."

Alcohol use

Pedestrian 3%
Driver 0%

Development Character

Urban 62%
Rural 38%

Day of Week

Weekday 87%
Weekend 13%

Road Feature

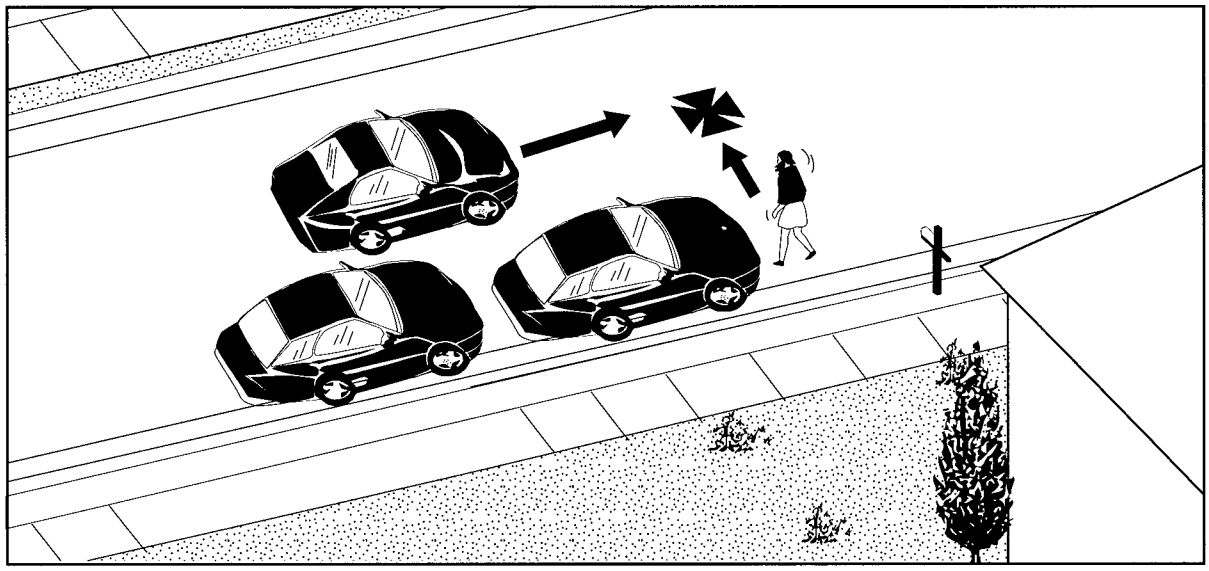
No special feature . 100%

Pedestrian Location

Travel lane 100%

Midblock Dart Out

Frequency: 232 cases; 4.6% of all crashes
Severity: 32% resulted in serious or fatal injuries



Description: At a midblock location, the motorist's view of the pedestrian was blocked until an instant before impact.

Summary: In comparison to all crashes, this crash was much more likely to involve child (age 0 to 9) pedestrians. Youth (age 10 to 14) were also slightly overrepresented.

Seventy-six percent of the pedestrians were struck in their first half of the roadway, 22 percent in their second half of the roadway, and 2 percent were unable to be specified.

This was largely an urban event (78 percent). Eighty percent occurred under daylight conditions. One to 2 lane roads and very low speed roads (<=40 km/h) were strongly overrepresented.

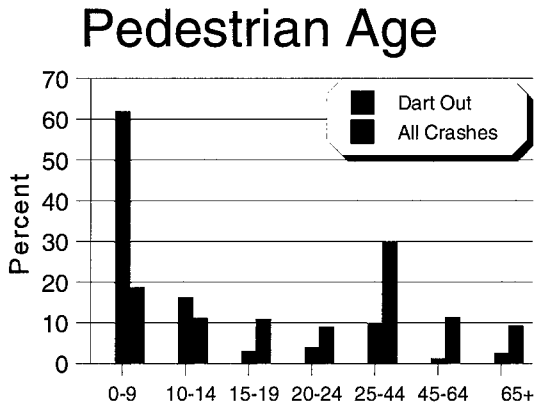
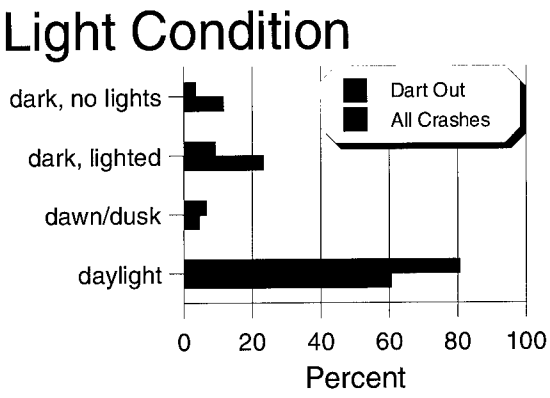
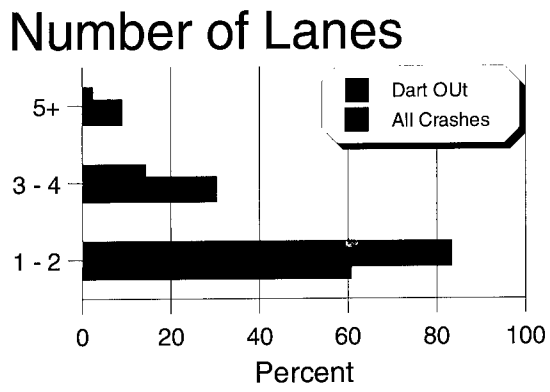


Figure 48. Pedestrian age in "Midblock Dart Out."





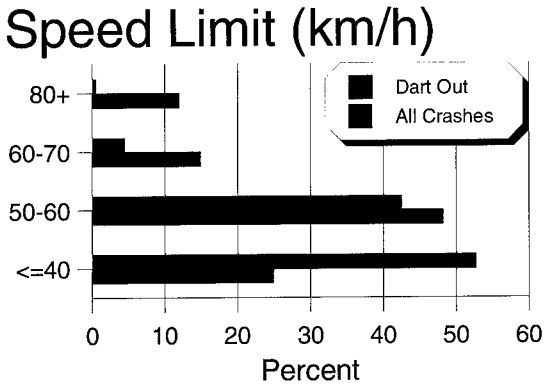


Figure 49. Light condition, number of lanes, and speed limit in "Midblock Dart Out."

Alcohol use

Pedestrian 3%
Driver 4%

Development Character

Urban 78%
Rural 22%

Day of Week

Weekday 63%
Weekend 37%

Road Feature

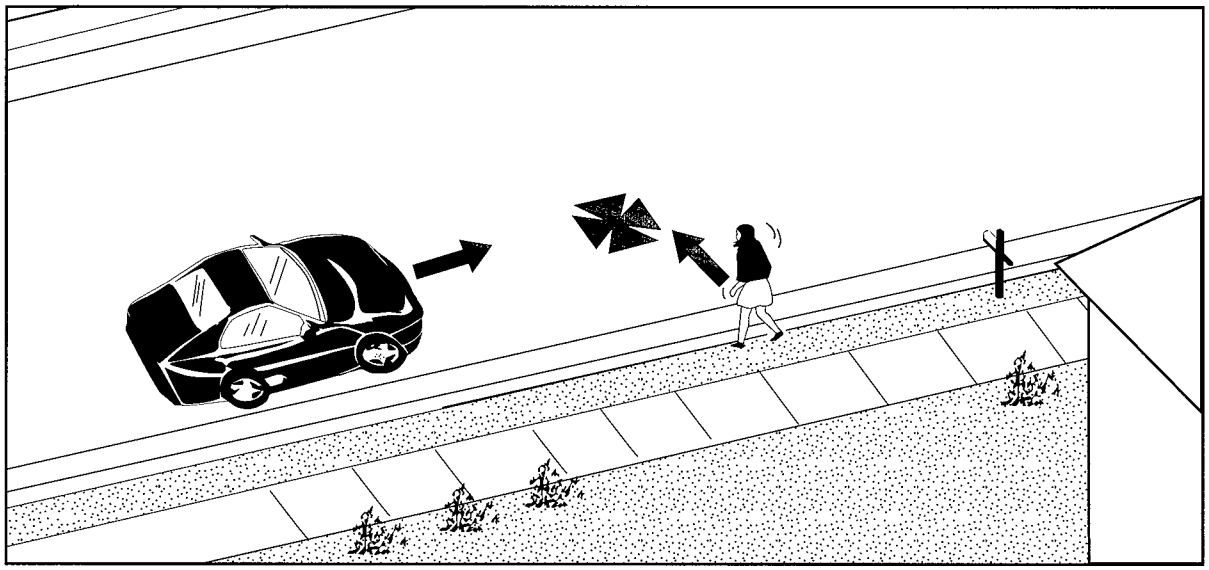
No special feature . . 92%
Private driveway 4%
All other 4%

Pedestrian Location

Travel lane 100%

Midblock Dash

Frequency: 442 cases; 8.7% of all crashes
Severity: 37% resulted in serious or fatal injuries



Description: At a midblock location, the pedestrian was struck while running and the motorist's view of the pedestrian was **not** obstructed.

Summary: In comparison to all crashes, this crash was much more likely to involve child (age 0 to 9) pedestrians. Youth (age 10 to 14) were also slightly overrepresented.

Although still occurring mostly on 1 to 2 lane roads, these crashes generally took place on higher speed roads than the "Midblock Dart Out" type crashes. Nearly a third occurred on roads with speeds of 60+ km/h.

Forty-five percent of adults ages 20 to 64 had been drinking.

"Midblock Dash" crashes were slightly more severe than average.

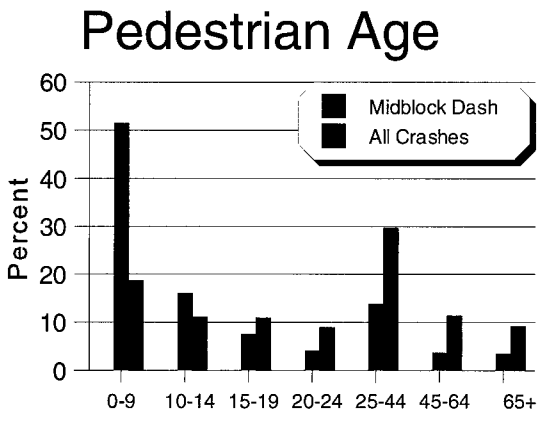
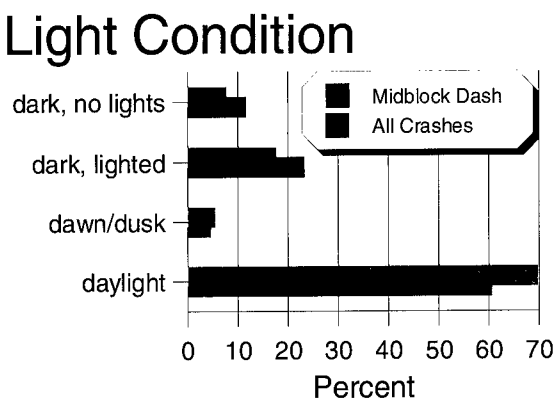
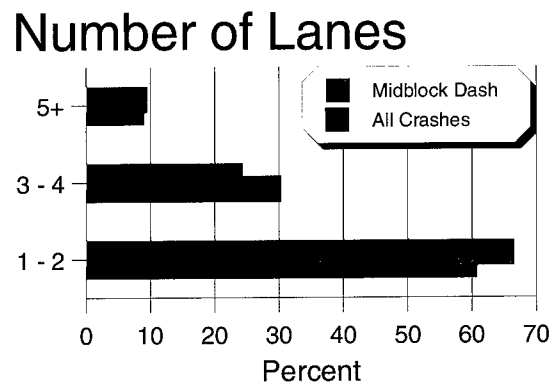
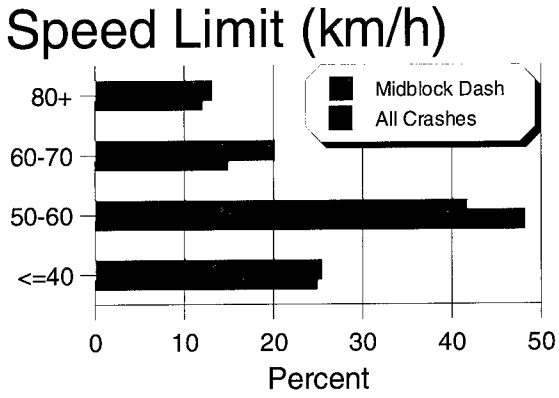


Figure 50. Pedestrian age in "Midblock Dash."







Alcohol use

Pedestrian	10%
Driver	5%

Development Character

Urban	63%
Rural	37%

Day of Week

Weekday	64%
Weekend	36%

Road Feature

No special feature	89%
Private driveway	4%
Public driveway	2%
All other	5%

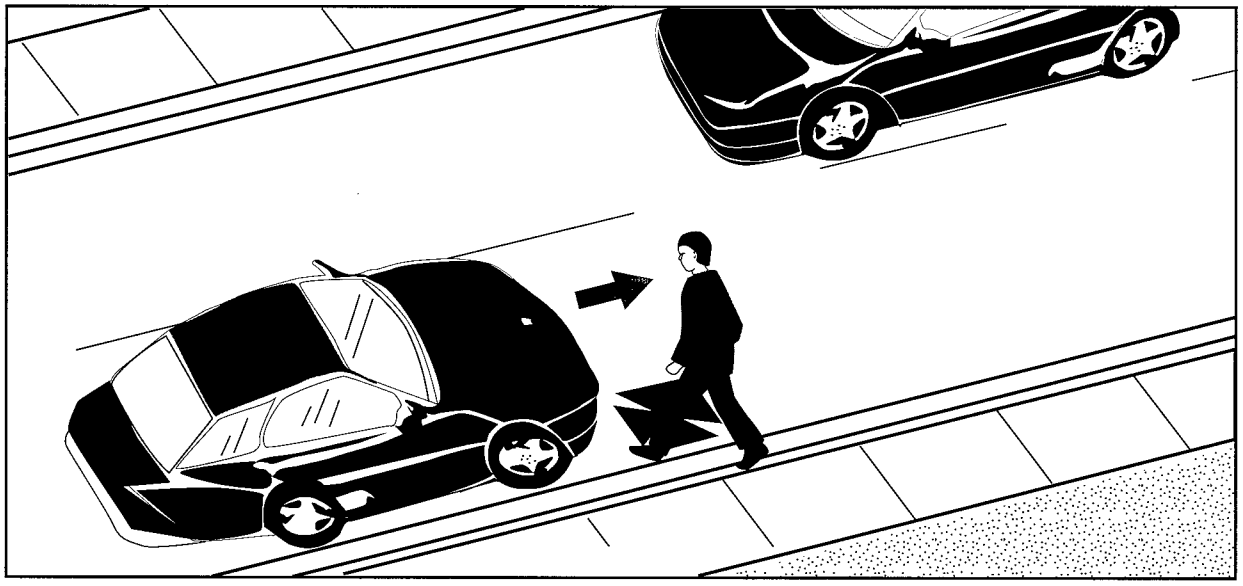
Pedestrian Location

Travel lane	100%

Figure 51. Light condition, number of lanes, and speed limit in "Midblock Dash."

Walked Into Vehicle At Midblock

Frequency: 76 cases; 1.5% of all crashes
Severity: 32% resulted in serious or fatal injuries



Description: The pedestrian walked into (i.e., struck) the vehicle at a midblock location. The pedestrian may have stepped into the travel lane and instantaneously collided with the vehicle (24 cases) or may have been walking in the lane prior to colliding with the vehicle (18 cases) (34 cases were undetermined).

Summary: In comparison to all crashes, this crash was more likely to involve child (age 0 to 9) and adult (age 25 to 44) pedestrians.

The light condition and roadway variables generally followed the distribution for all crashes combined.

Fifty-seven percent of pedestrians ages 20 to 64 had been drinking.

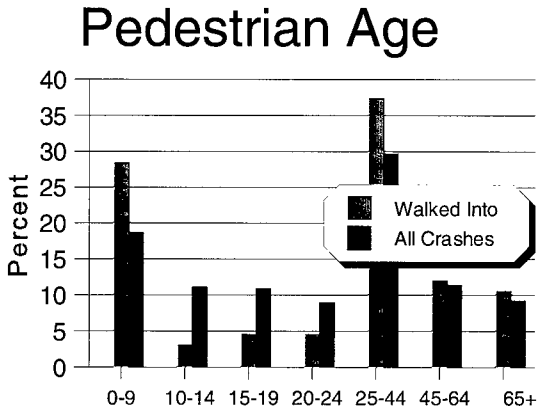
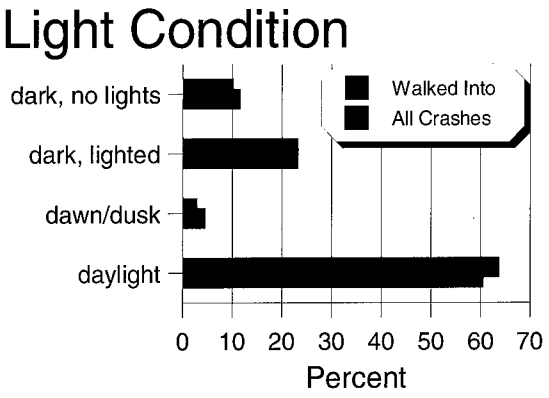
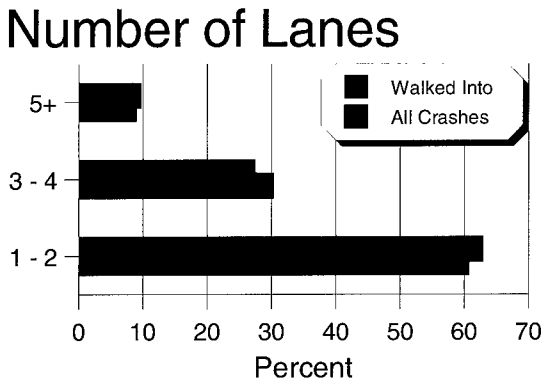


Figure 52. Pedestrian age in "Walked Into Vehicle At Midblock."





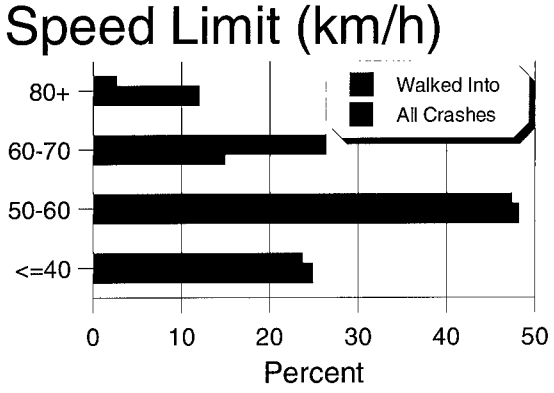


Figure 53. Light condition, number of lanes, and speed limit in "Walked Into Vehicle At Midblock."

Alcohol use

Pedestrian	31%
Driver	0%

Development Character

Urban	62%
Rural	38%

Day of Week

Weekday	61%
Weekend	39%

Road Feature

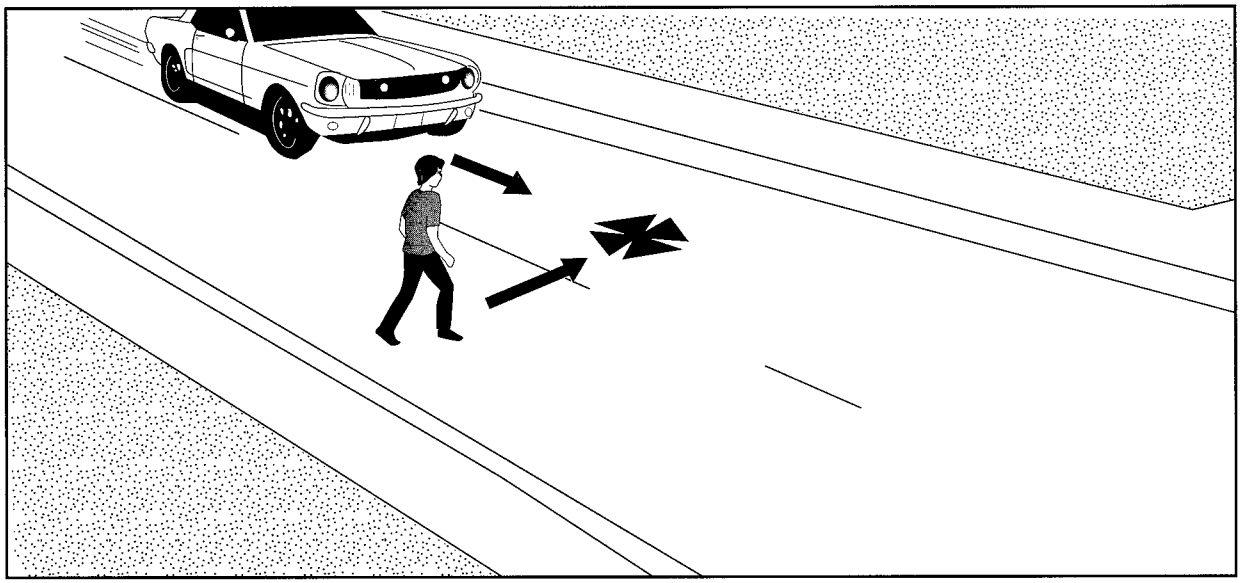
No special feature	89%
Public driveway	2%
Private driveway	2%
All other	7%

Pedestrian Location

Travel lane	99%
Parking lot lane	1%

Midblock—Other

Frequency: 548 cases; 10.8% of all crashes
Severity: 49% resulted in serious or fatal injuries



Description: The crash occurred at midblock but does not conform to any of the specified crash types.

Summary: In comparison to all crashes, this crash was more likely to involve adult pedestrians ages 25 and older.

Six percent of the pedestrians misjudged the crossing gap, 9 percent had been standing in the roadway, 11 percent stepped into the travel lane and were instantly struck, and 36 percent had been walking in the travel lane prior to impact. Thirty-eight percent were undetermined.

More than half of these crashes occurred under conditions of darkness, and 41 percent on weekends.

Overall, 33 percent of pedestrians had been drinking, and 45 percent of those ages 20 to 64. These crashes were much more severe than average.

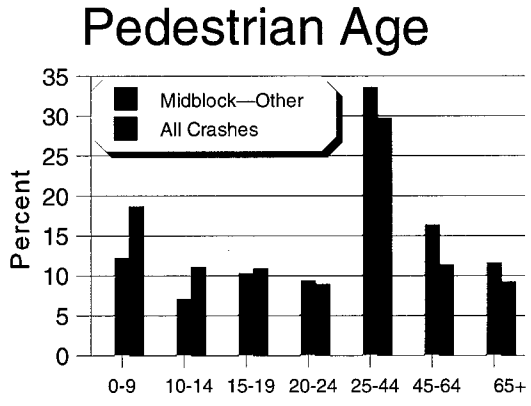
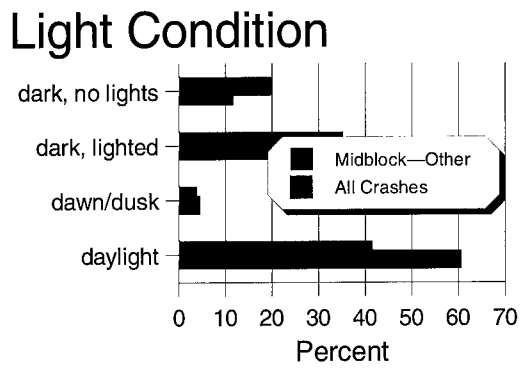
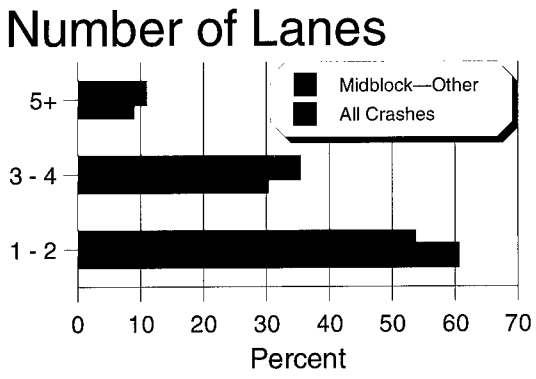
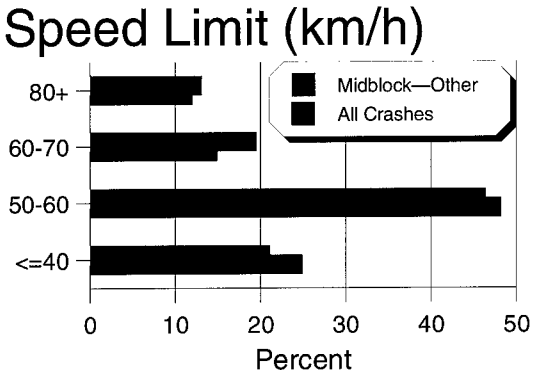


Figure 54. Pedestrian age in "Midblock—Other."







Alcohol use

Pedestrian	33%
Driver	9%

Development Character

Urban	67%
Rural	33%

Day of Week

Weekday	59%
Weekend	41%

Road Feature

No special feature	88%
Public driveway	3%
Private driveway	2%
All other	7%

Pedestrian Location

Travel lane	99%
Road related; unk	1%

Figure 55. Light condition, number of lanes, and speed limit in "Midblock—Other."

Other
Or
Inadequate Information

Lying In Road

Frequency: 22 cases; 0.4% of all crashes
Severity: 67% resulted in serious or fatal injuries

Description: The pedestrian was lying in the road and was struck by a moving vehicle.

Summary: This crash involved primarily adult (age 25 to 44) pedestrians who accounted for more than 70 percent of the crashes.

More than 60 percent occurred under conditions of darkness, no lights.

Forty-two percent of the pedestrians had been drinking.

As would be expected, these crashes were much more likely than average to result in serious or fatal injuries.

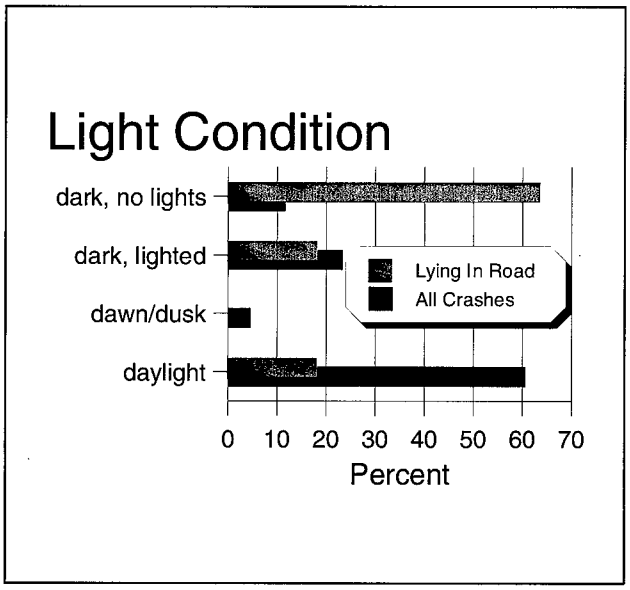


Figure 56. Light Condition in "Lying In Road."

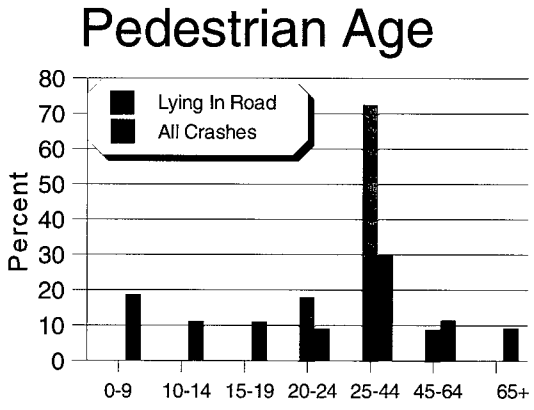


Figure 57. Pedestrian age in "Lying In Road."

Suicide

Frequency: 6 cases; 0.1% of all crashes
Severity: 100% resulted in serious or fatal injuries

Description: The pedestrian committed suicide or attempted suicide by deliberately walking, running, jumping, etc. in front of a moving vehicle.

Summary: These few crashes occurred exclusively to pedestrians ages 15 to 44.

Dark light conditions were strongly overrepresented.

Half of the pedestrians had been drinking.

All resulted in severe or fatal injuries.

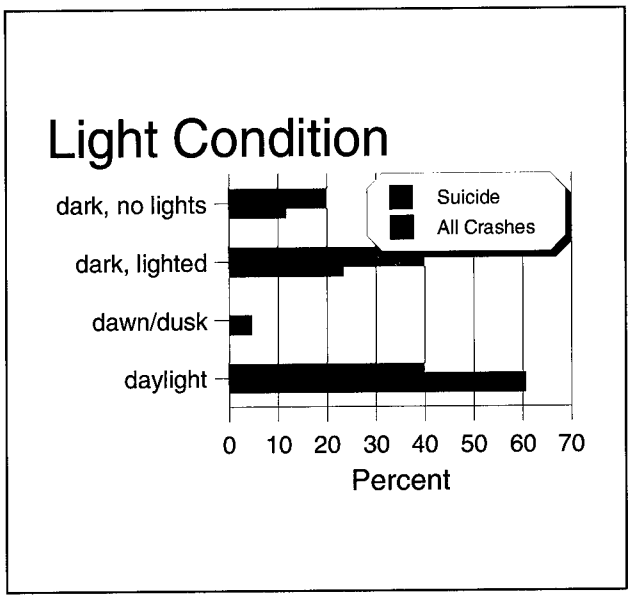


Figure 58. Light Condition in "Suicide."

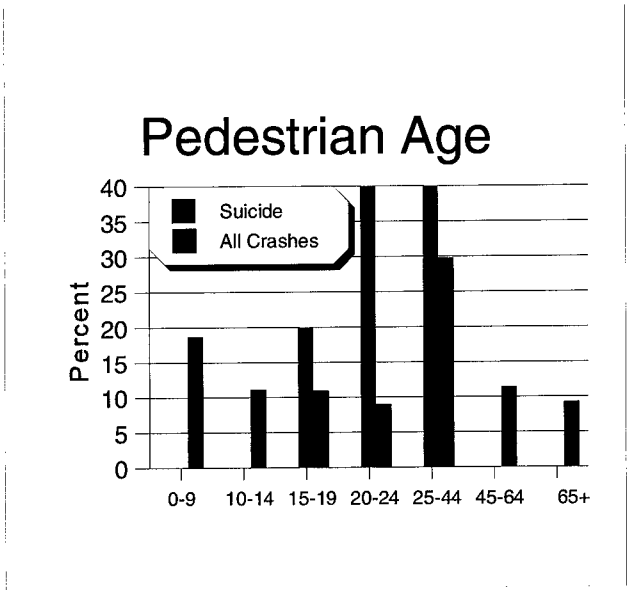


Figure 59. Pedestrian age in "Suicide."

Assault With Vehicle

Frequency: 55 cases; 1.1% of all crashes
Severity: 18% resulted in serious or fatal injuries

Description: The driver intentionally caused the vehicle to strike a pedestrian.

Summary: In comparison to all crashes, this crash was more likely to involve teen (age 15 to 19), young adult (age 20 to 24), and adult (age 25 to 44) pedestrians.

Nearly half of the pedestrians were in the travel lane, 18 percent were in a parking lot location, and 13 percent on the shoulder of the road.

Alcohol was not reported as a major factor in these crashes.

Only 18 percent resulted in a serious or fatal injury.

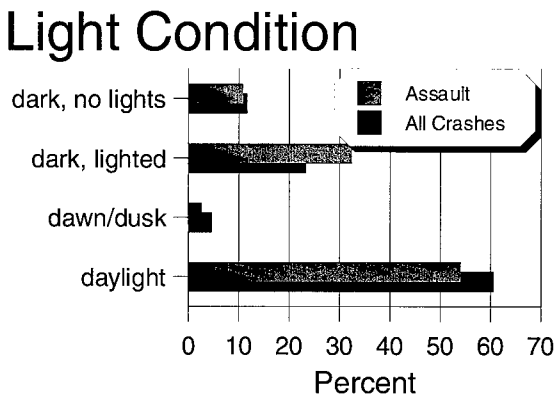


Figure 60. Light condition in "Assault With Vehicle."

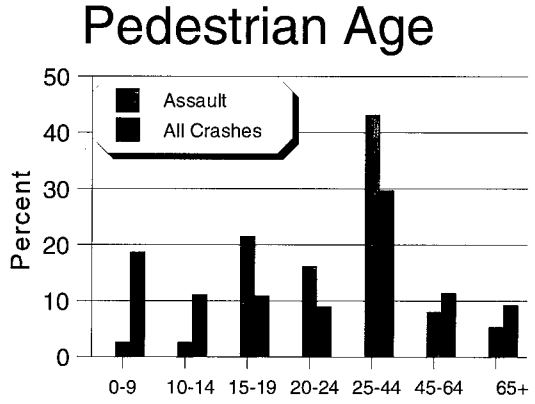


Figure 61. Pedestrian age in "Assault With Vehicle."

Domestic/Dispute Related

Frequency: 76 cases; 1.5% of all crashes
Severity: 23% resulted in serious or fatal injuries

Description: The pedestrian was struck by a vehicle during the course of a domestic or other dispute.

Summary: In comparison to all crashes, this crash was more likely to involve teen (age 15 to 19), young adult (age 20 to 24), and adult (age 25 to 44) pedestrians.

Half occurred under conditions of darkness, and more than 40 percent on very low speed (<= 40 km/h) roads.

Twenty-six percent of pedestrians had been drinking.

This crash tended to be less severe than the average.

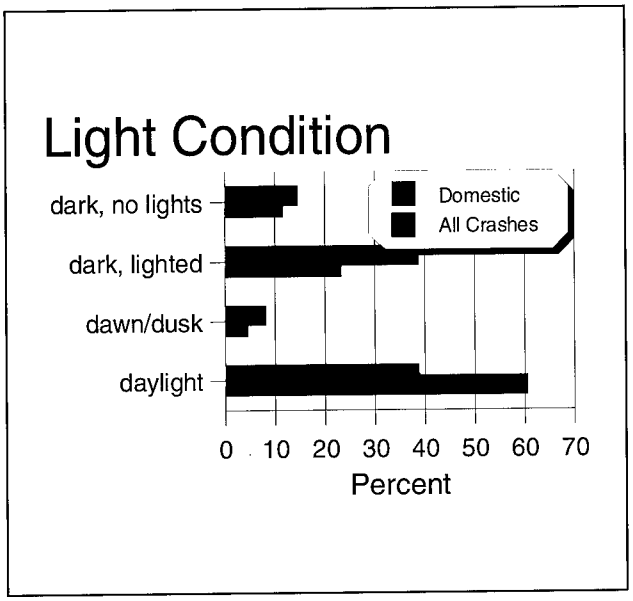


Figure 62. Light Condition in "Domestic/Dispute Related."

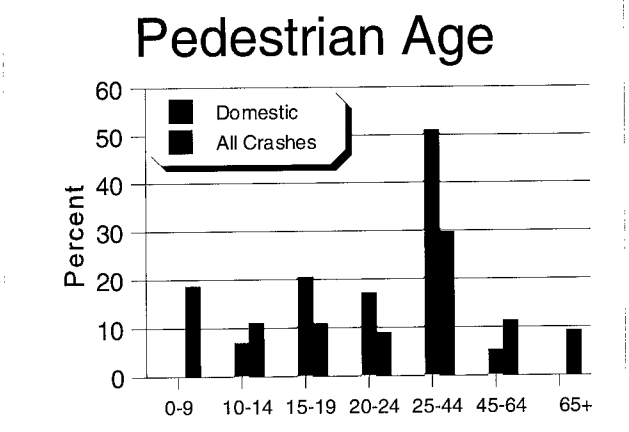


Figure 63. Pedestrian age in "Domestic/Dispute Related."

Pedestrian On Vehicle

Frequency: 40 cases; 0.8% of all crashes
Severity: 31% resulted in serious or fatal injuries

Description: The pedestrian was sitting on, leaning against, or clinging to a vehicle which began to move or was moving.

Summary: In comparison to all crashes, this crash was much more likely to involve youth (age 10 to 14) and teen (age 15 to 19) pedestrians.

Twenty-six percent of pedestrians and 15 percent of motor vehicle operators had been drinking.

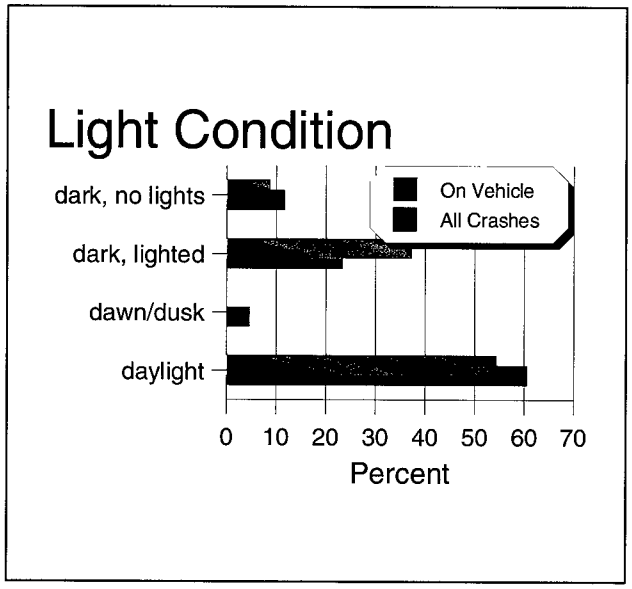


Figure 64. Light Condition in "Pedestrian On Vehicle."

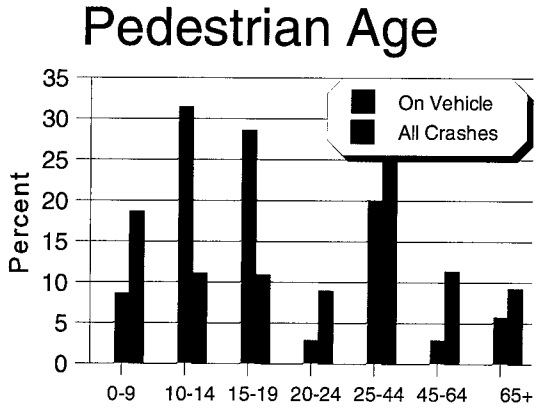


Figure 65. Pedestrian age in "Pedestrian On Vehicle."

Vehicle-Vehicle Crash

Frequency: 61 cases; 1.2% of all crashes
Severity: 26% resulted in serious or fatal injuries

Description: The pedestrian was struck as a result of a prior vehicle-vehicle collision.

Summary: In comparison to all crashes, this crash was more likely to involve teen (age 15 to 19) and adult (age 25 to 44) pedestrians.

Twenty-one percent of pedestrians were on a sidewalk and 15 percent were in on-street parking when struck.

Fourteen percent of drivers had been drinking.

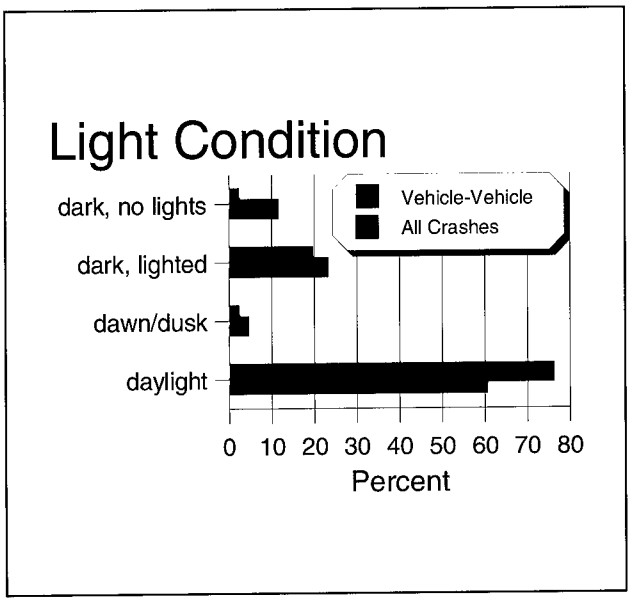


Figure 66. Light Condition in "Vehicle-Vehicle Crash."

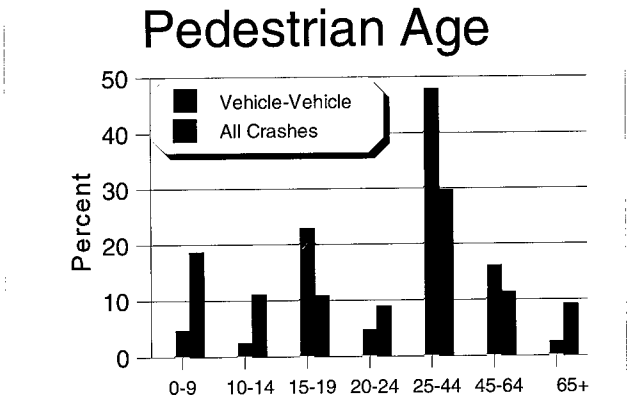


Figure 67. Pedestrian age in "Vehicle-Vehicle Crash."

Vehicle-Object Crash

Frequency: 25 cases; 0.5% of all crashes
Severity: 11% resulted in serious or fatal injuries

Description: The pedestrian was struck as a result of a prior vehicle-object (e.g. building; pole; sign, etc.) collision.

Summary: In comparison to all crashes, this crash was more likely to involve adult pedestrians age 25 and older. Middle (age 45 to 64) and elder adults (age 65+) were strongly overrepresented.

Alcohol was generally not a factor in these crashes.

Vehicle-Object Crashes were less severe than the average.

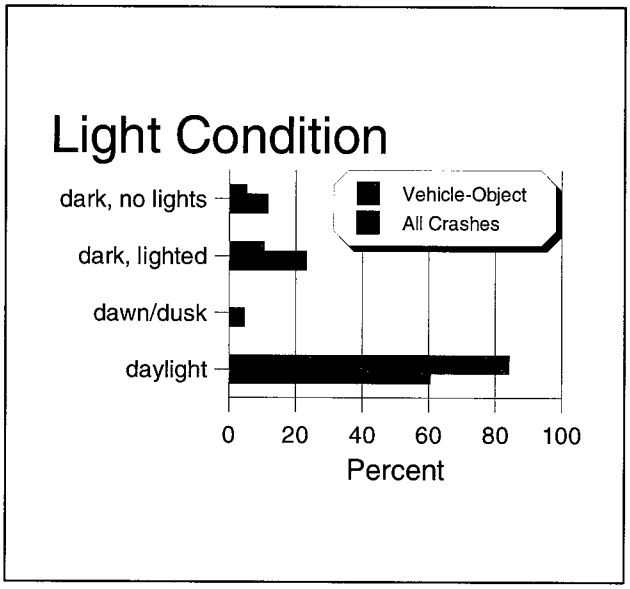


Figure 68. Light Condition in "Vehicle-Object Crash."

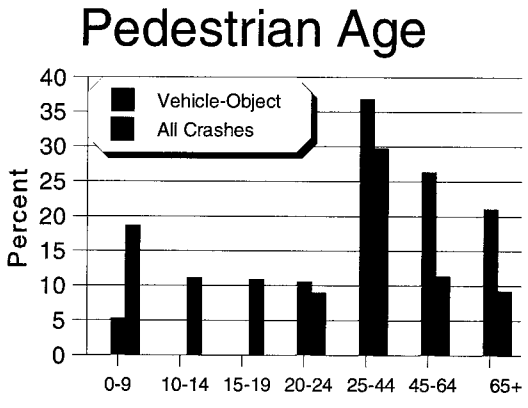


Figure 69. Pedestrian age in "Vehicle-Object Crash."

Weird

Frequency: 85 cases; 1.7% of all crashes
Severity: 45% resulted in serious or fatal injuries

Description: The pedestrian was struck by a vehicle, but the circumstances were unusual and did not conform to any specified crash type.

Summary: In comparison to all crashes, this crash was more likely to involve teen (age 15 to 19), young adult (age 20 to 24), and adult (age 25 to 44) pedestrians.

Darkness, with and without lights, were overrepresented light conditions.

About two-third of these crashes took place on 1 to 2 lane roads.

Twenty-seven percent of pedestrians and 14 percent of drivers had been drinking.

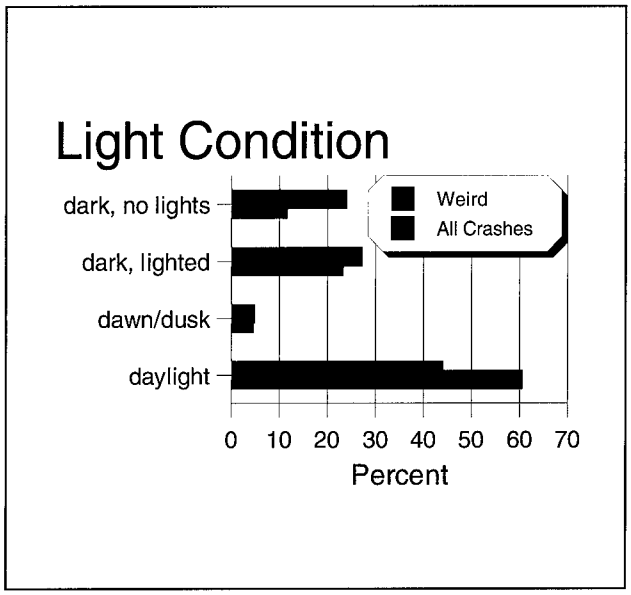


Figure 70. Light Condition in "Weird."

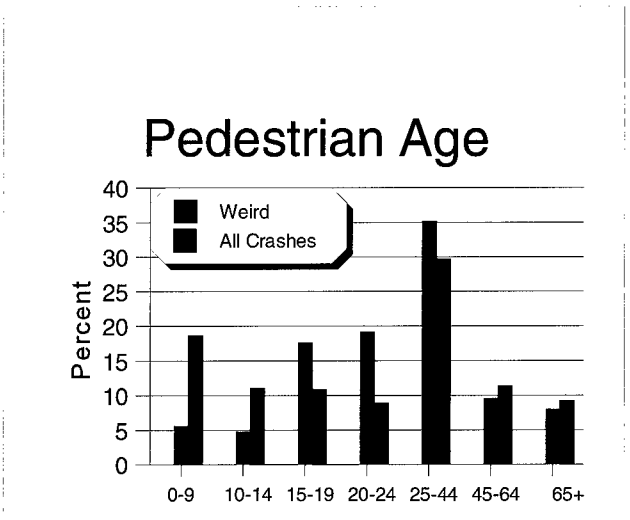


Figure 71. Pedestrian age in "Weird."

Inadequate Information

Frequency: 27 cases; 0.5% of all crashes
Severity: 41% resulted in serious or fatal injuries

Description: Insufficient information was available to specify the crash type.

Summary: Pedestrians ages 10 to 44 were slightly overrepresented.

More than 40 percent occurred under conditions of darkness, no lights.

Forty percent of pedestrians and 13 percent of drivers had been drinking.

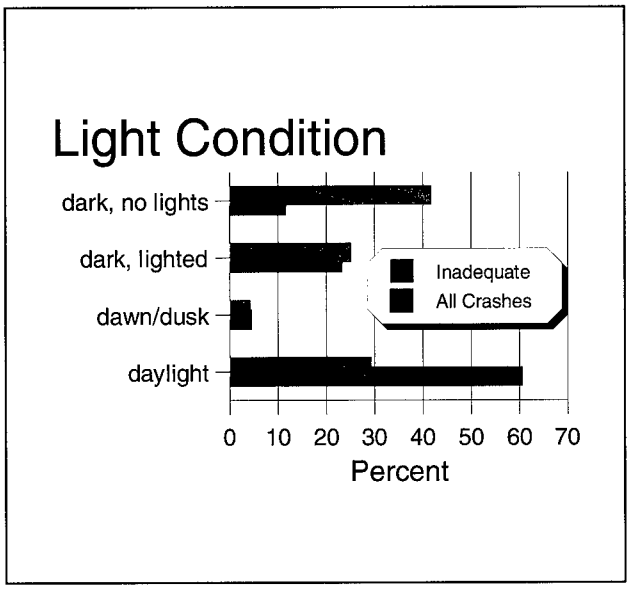


Figure 72. Light Condition in "Inadequate Information."

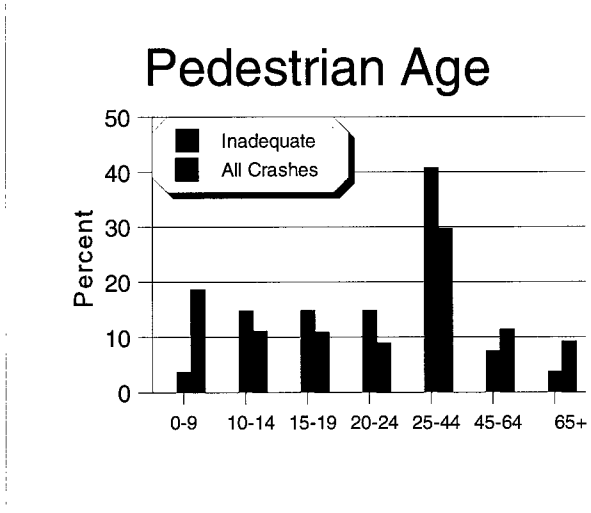


Figure 73. Pedestrian age in "Inadequate Information."

APPENDIX

Coding Guidelines for Pedestrian Crash Typing

Adapted from the NHTSA "Manual Accident Typing for Pedestrian Accidents - Coder's Handbook" *

1. Read the police accident report carefully and completely:

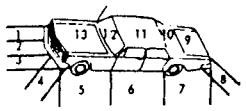
   - First, read the narrative. In cases of conflicting stories give:

   - First priority to officer's conclusions.
   - Second priority to witness statements.
   - Third priority to pedestrian and driver statements.

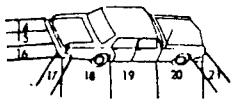
DESCRIBE WHAT HAPPENED: VEH #1 TRAVELED SOUTH AND STRUCK THE PEDESTRIAN WHICH WAS WALKING NORTH ON RP 1524 FACING TRAFFIC. VEH #1 CONTINUED TRAVELING SOUTH AFTER STRIKING THE PEDESTRIAN. THE PEDESTRIAN REMAINED AT THE SCENE.

   - Next, review the information in the specific information categories (i.e., the "check off" boxes) such as time, day, violations, weather, pedestrian age, driver age, and roadway information.

POINT(S) OF INITIAL CONTACT Write in Codes	VEH. 1	VEH. 2
	26	N/A
ROLLOVER ☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
CROSSED MEDIAN ☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

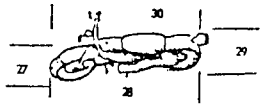


0 No Contact



Underneath:
22 Front
23 Center
24 Rear

26. Unknown



Motorcycle Ricycle or Moped

ROADWAY INFORMATION					DRIVER 1	DRIVER 2 OR PED.		VEH. 1	VEH. 2
1. Locality	1	8. Road Surface	4						
2. Development Type	1	9. Road Defects	7	14. Vision Obstruction	UNK	1	18. Vehicle Defects	7	N/A
3. Road Feature	14	10. Road Condition	1	15. Physical Condition	UNK	1	19. Speed Limit (for each vehicle)	55	—
4. Road Character	7	11. Light Condition	5	16. Intoxication	UNK	1	20. Estimated Original Traveling Speed	UNK	—
5. Road Class	4	12. Weather	1	17. Chemical Test Given	☐ Yes ☐ No ☐ Refused	☐ Yes ☒ No ☐ Refused	21. Estimated Speed at Impact	UNK	—
6. Number of Lanes	2	13. Traffic Control	11				22. Tire Impressions Before Impact (ft.)	0	N/A
7. Road Configuration	2	Operating ☐ Yes ☐ No	Visible ☐ Yes ☐ No				23. Distance Traveled After Impact (ft.)	UNK	UNK

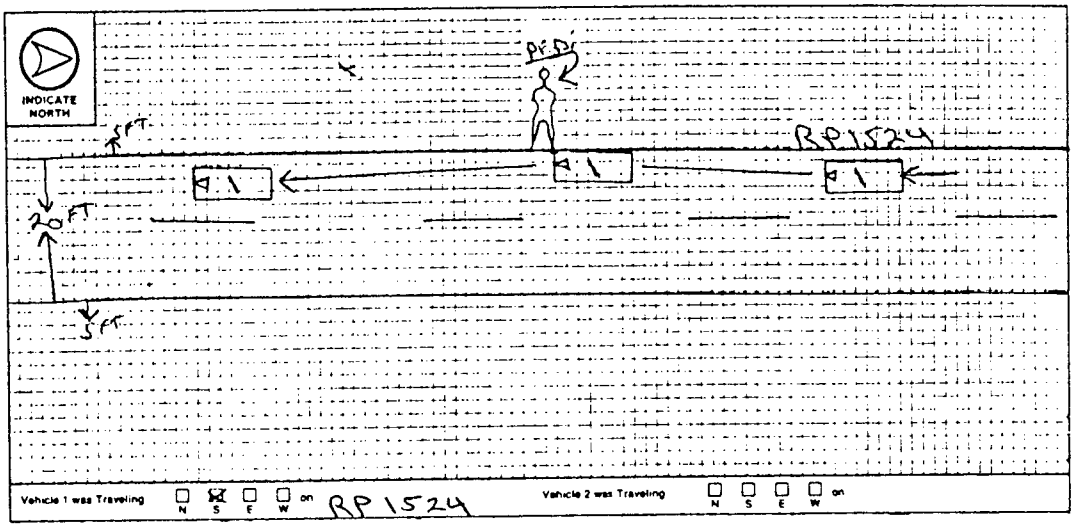
CONTRIBUTING CIRCUMSTANCES (Check as many as apply)

Driver 1	Driver 2		Driver 1	Driver 2		Driver 1	Driver 2	
☐	☐	1. No violation indicated	☐	☐	10. Pass stopped school bus	☐	☐	19. Safe movement violation
☐	☐	2. Alcohol use	☐	☐	11. Passing on hill	☐	☐	20. Following too closely
☐	☐	3. Drug use	☐	☐	12. Passing on curve	☐	☐	21. Improper backing
☐	☐	4. Yield	☐	☐	13. Other improper passing	☐	☐	22. Improper parking
☐	☐	5. Stop sign	☐	☐	14. Improper lane change	☐	☐	23. Unable to determine
☐	☐	6. Traffic signal	☐	☐	15. Use of improper lane	☐	☐	24. Left of center
☐	☐	7. Exceeding speed limit	☐	☐	16. Improper turn	☐	☐	25. Right turn on red
☐	☐	8. Exceeding safe speed	☐	☐	17. Improper or no signal	☒	☐	26. Other PENDING
☐	☐	9. Minimum speed law	☐	☐	18. Improper vehicle equipment			

* A version of this manual is included as Appendix A in the parent report for this project entitled "Pedestrian and Bicycle Crash Types of the Early 1990's" by William W. Hunter, Jane C. Stutts,Wayne E. Pein and Chante L. Cox (Report No. FHWA-RD-95-163).

- Finally, examine the diagram. Remember that diagrams are seldom drawn to scale. Although a diagram might appear to show an accident occurred at an intersection, for example, check the report form for the actual measurement of the point of impact from the nearest intersection.

  Note that for pedestrian crashes, the boundaries of an intersection crash extend up to and including 50 feet from the corner. Alleys and driveways are only considered intersections when they are controlled by a traffic signal.



2. Review the descriptions of the Pedestrian Accident Type Categories page in order (see chart).

   For the sample case shown, category 5 applies—pedestrian was struck while walking or running along roadway.

3. Turn to the tabbed page for that category and read down the accident type descriptions in order. Stop at the first category that fits the facts on the report. Refer to the Definitions and Diagrams for explanations of terms and examples.

   In this case, the pedestrian was not hitchiking or crossing a limited access expressway (Types 510 and 520). He also was not walking or running along a road in the same direction as traffic (Type 531). However, he *was* walking or running along a road facing traffic (Type 532).

4. Enter the code for that accident type beside the report number on the data form.

5. If none of the types apply, refer back to the Pedestrian Accident Type Categories page and continue down the list until you find the next category that applies.

If more than one pedestrian is involved in an accident, the first pedestrian struck defines the accident. Consider only the circumstances surrounding the collision with the first pedestrian in determining the type.

Tab 1	Did motorist stike ped going to/from or crossing near: bus or bus stop? ice-cream vendor? rural residential mailbox? Or was ped exiting/entering a stopped or parked vehicle?
Tab 2	Was the striking vehicle: driverless? backing? in pursuit, being pursued, or an emergency vehicle?
Tab 3	Was ped struck by motorist while going to/from or near/next to a: disabled vehicle? active police/emergency vehicle?
Tab 4	Was ped stuck while: working in roadway? playing in roadway prior to motorist's appearance? on a play vehicle?
Tab 5	Was ped struck by motorist while: hitchhiking? crossing a limited access expressway? walking or running along a road?
Tab 6	Did motorist stike ped: on/near curb or roadway edge? on sidewalk or other nonroadway location?
Tab 7	Did accident occur at or within 50 feet of an intersection?
Tab 8	Did the accident occur midblock (more than 50 feet from an intersection)?
Tab 9	Other type or inadequate information

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