

FEDERAL GOVERNMENT'S ROAD SAFETY INITIATIVE

**YOUNG DRIVER RESEARCH PROGRAM -
MASS CRASH DATA ANALYSIS**

GENERAL ESTIMATES SYSTEM (1989) - NORTH-WEST REGION

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General Estimates System (1989) - North-West Region

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Abstract

This report is seventh in a series examining young versus older driver differences in car crashes for both Australian and USA data. Bivariate analyses examining the similarities and differences between drivers of various age groups involved in casualty crashes according to the General Estimates System for the North-West Region of the USA (1989) were conducted. Results are presented as a series of tables. The data was also examined for day and night-time differences. Conclusions and comparisons between the two data sets are not presented as the 11th report of the series provides an overview of all findings.

Key Words

YOUNG DRIVER, CRASH ANALYSIS, DAY, NIGHT, CAR DRIVER

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1 CHARACTERISTICS OF YOUNG DRIVER CRASHES - MASS CRASH DATA ANALYSIS

1.1 INTRODUCTION

The Monash University Accident Research Centre was commissioned by the Federal Office of Road Safety to undertake the Young Driver Research Program as part of the Federal Government's Road Safety Initiative.

One of the research projects in the Young Driver Research Program involved identifying the characteristics of young driver crashes through supplementing previous literature reviews which identify the known characteristics of young driver crashes, behaviour and performance from experimental, field and evaluation studies.

In addition, this project involved deriving information from a systematic analysis of Australian and US mass crash data to complement information from the literature review. The results of this analysis are presented in a series of reports which are outlined below:

Australian data

Report N ^o	Data File	State	Year(s)
1	Casualty crash	New South Wales	1986-1990
	"	Victoria	1984-1989
2	"	South Australia	1986-1990
3	FORS Fatality	New South Wales	1988
4	"	Victoria	"
5	"	South Australia	"
6	"	NSW, Victoria and SA combined	"

USA data

Report N ^o	Data File	US Region	Year(s)
7	GES	North-west	1989
8	"	Mid-west	"
9	"	West	"
10	"	South	"

Overview report

Report N ^o	
11	Reviews the main findings presented in Report N ^{os} 1 to 10

The tables presented in the first report are accompanied by a discussion of results highlighting the main findings contained in that report, as well as noting some of the difficulties inherent in analysis of large data sets. Reports 2 to 10 contain results presented in tabular form only, although a brief description of the data used is given. Report N^o 11 contains an overview of results comprising two sections: the first compares results with the main literature findings (see Macdonald, 1994a 1994b); the second notes similarities and differences in results between States and compared to the US data.

This report (N^o 7 in the series) presents results for casualty crashes which occurred in the North-west region of the US in 1989, and outlines, in turn:

- the role of mass crash data in identifying problem areas for young driver safety
- the data set used in the study
- the methodology used
- results:
 - general bivariate patterns
 - daytime vs night-time young driver crashes

This study provides a systematic analysis and review of young driver crashes as represented in mass crash data; to date only ad-hoc, fragmented investigations of young driver crashes using mass crash data have been undertaken. This series of reports, therefore, serve as a comprehensive source document on young driver crashes.

1.2 USING MASS CRASH DATA

Mass crash data provide the most complete and readily available details about crash events, in terms of:

- the temporal and spatial details about the crash incident (where and when it occurred)
- driver (and other involved road user) demographics
- environmental conditions when the crash occurred
- the sequence of events preceding the crash (crash types), including the traffic context and vehicle/road user actions.

Due to reporting criteria, these data are also more representative of crashes involving injury (particularly more serious injury) to the road user(s) involved in the crash than of less severe crashes (eg. property damage only crashes).

Information derived from analysis of mass crash data is essential for identifying target areas or 'problems' where countermeasures should be directed. Analysis of mass crash data allows:

- the magnitude of the 'problem' to be ascertained
- the stability of the 'problem' to be determined
- the generality/specificity of the 'problem' to be determined (eg. Are both males and females affected? Does the 'problem' occur at both day and night; in metropolitan and rural locations?).

In using mass crash data to describe the young driver 'problem' and identify target areas, it is important to balance the need to disaggregate the crash problem into homogeneous sub-problems (with similar characteristics), with the number of levels by which the problem is disaggregated. The more homogeneous the sub-problem, the more likely it is that an appropriate countermeasure can be developed that will be effective in reducing that sub-problem; however, in terms of cost-effectiveness, the sub-problem must be sufficiently large for the cost of the countermeasure to be distributed amongst sub-problem members to allow benefits of the countermeasure to, at least, match its costs (Cameron, 1990).

Countermeasures are also more likely to be cost-effective if they target a sub-problem which has a higher than average risk of crash involvement, or of severe injury when involved (Cameron, 1990). The lack of comparable exposure data to determine crash or severity risk of sub-problems compared with average risks, however, means that 'high' risk sub-problems cannot be identified directly in this study.

Information derived from analysis of mass crash data is inherently descriptive in nature; that is, it does not provide information regarding the causal mechanisms or factors leading to a crash occurring. Road user 'errors' or factors causally related to the behaviour and context identified in a crash may only be inferred.

To be successful, a countermeasure must either:

- control and decrease the opportunity for the occurrence of behaviour related to crash problem types via external impositions, or
- 'correct' the causes and behavioural problem related to the critical actions leading to the crash.

Although the former approach has been applied successfully to other road safety problems, it has not led to significant gains in the young driver area. This is because the over-involvement of young drivers in crashes is **not** limited to a small number of crash types (where each could be addressed by a specific strategy), but is a more general phenomenon (Drummond & Triggs, 1991).

In the case of young driver safety, the latter approach is more likely to lead to more **efficient** countermeasures (those which provide greater overlap between a behavioural problem and a countermeasure). However, this can only be achieved by obtaining a better understanding of the behavioural problem (a product of the interaction between performance and motivational factors). A better understanding of the driving process, skilled performance and motivational factors is the first step to achieving this. A description of the behavioural problem may lead to effective countermeasures, but these will be generally less efficient.

Notwithstanding the limitations of mass crash data analysis outlined above, the identification of sub-problems by their relative incidence within the population of young driver crashes is an important criterion for selecting targets for cost-beneficial countermeasures and understanding/interpreting other young driver performance findings.

2 GENERAL ESTIMATES SYSTEM (1989) - MID-WEST REGION - BIVARIATE ANALYSES

2.1 INTRODUCTION

Data collection for the General Estimates System (GES) file began in 1988 as an initiative by the Washington D.C. based National Highway Traffic Safety Administration (NHTSA). The file contains data on road crashes involving all types of motor vehicles.

The GES obtains its data from a nationally representative probability sample selected from an estimated 6.6 million police-reported crashes which occur annually in the United States, involving fatalities, injuries or major property damage. The 1989 sample data file comprised a subset of approximately 44,000 randomly selected Police Accident Reports.

Selection of this sample of Police Accident Reports followed three stages. The first stage involved the sampling of geographic *areas* called *Primary Sampling Units (PSUs)* from across the United States. A PSU is defined as either a central city, a county surrounding a central city, an entire county, or a group of contiguous counties. The U.S. was divided into 1,195 of these PSUs, which were then grouped into four geographic *regions*. These were the Northwestern, Midwestern, Southern and Western regions. Within each region, PSUs were further categorized into three types representing large central cities, large suburban areas, and all others.

In the second stage of selection, a sample of police jurisdictions was drawn from within the geographic areas. This was a probability sample from within each PSU, where the probability of a jurisdiction being selected was proportional to the number of crashes investigated within that jurisdiction. Therefore, as the number of reported crashes increased, the probability of selecting the particular jurisdiction also increased (an average of six or seven jurisdictions were selected from each PSU).

Stage three of the process involved the selection of Police Accident Reports from within the sampled *jurisdictions*. Accident Reports were classified into one of three categories comprising:

- all crashes involving a 'towed-away' vehicle
- all crashes not involving a 'towed-away' vehicle, but involving injury to at least one person
- all other crashes.

A systematic sample of crashes was selected from within each of the above categories, based on different sampling ratios. Where the number of police investigated crashes within any particular jurisdiction were too numerous to list, a subsample of Accident Reports were listed, and the final sample drawn from among these.

Data coded in the abovementioned form for the year 1989 was obtained from the NHTSA, and prior to being examined in bivariate analyses (age by variable of interest), was modified in the following manner:

- As the focus of primary interest was young *car* drivers, a driver-based file was created. Included were drivers of cars, station-wagons, coupes, hatchbacks, convertibles, vans, utilities, pickups and 4WD vehicles.
- Most *casualty crash files* contain a variable which stipulates the severity of the crash ranging from a fatality to property damage, but this system creates problems in making across database comparisons due to differing reporting requirements for the lower severity levels. Because of this, it has been the practice for this series of reports to only include the three most severe crash levels in the analysis, which for the US data are: fatalities, incapacitating injuries and nonincapacitating injuries.
- Age of drivers was grouped as follows: 0 to 15, 16 to 25 (16 being the minimum licensing age in the US), 26 to 40, 41 to 55 and 56 to 98 years (the latter being the oldest age found in the data). The benefit of this grouping is that there are only four age group categories of licensed drivers which facilitates presentation and discussion of results. The term 'young drivers' refers only to drivers aged between 16 and 25 years.
- Reporting of all categories coded within some variables (eg. first harmful event) was in some cases impractical due to low frequency counts on certain categories. The general practice has been to present categories with a reasonable number of coded cases, and collapse those with particularly low frequencies. A list of variables which have been collapsed for this reason is presented in Appendix A.
- All 'not known' cases (eg. not known age group, not known day of week, etc) were collapsed with other missing cases.

2.2 TABLES - BIVARIATE ANALYSES

The tables on the following pages present percentages for each variable of interest distributed by age group. As the GES file, unlike the Australian data, consists of only a *sample* of crashes from the US for 1989, it was considered more appropriate to present percentage tables in the main body of the report instead of frequency tables as was the case for the Australian data. Frequency tables for the GES data have, however, been included as Appendices. Variables have been grouped under headings which are consistent with those used in the first report, and page numbers have been included for convenience.

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GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MAXIMUM INJURY SEVERITY (CRASH LEVEL) BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
Non-incapacitating injury	100.0%	68.4%	64.4%	65.1%	67.7%	66.5%
Incapacitating injury	0.0%	22.1%	23.4%	20.6%	19.3%	21.8%
Fatal injury	0.0%	2.0%	2.2%	3.0%	4.0%	2.6%
Unknown injury severity	0.0%	7.6%	10.0%	11.3%	9.1%	9.1%
	0.1%	35.7%	31.3%	15.1%	17.7%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MAXIMUM INJURY SEVERITY (VEHICLE LEVEL) BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No injury	0.0%	27.8%	33.9%	46.5%	36.2%	34.0%
Possible injury	0.0%	5.8%	6.7%	7.4%	8.3%	6.8%
Non-incapacitating injury	100.0%	45.3%	38.2%	30.4%	37.6%	39.5%
Incapacitating injury	0.0%	14.0%	13.2%	8.4%	10.0%	12.2%
Fatal injury	0.0%	1.1%	1.6%	1.7%	2.6%	1.6%
Injury severity unknown	0.0%	5.9%	6.4%	5.7%	5.4%	6.0%
	0.1%	35.6%	31.4%	15.1%	17.7%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF VEHICLES INVOLVED BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
1	50.0%	41.5%	37.3%	30.1%	29.7%	36.4%
2	50.0%	49.9%	51.9%	55.6%	56.9%	52.6%
3	0.0%	6.6%	8.0%	11.4%	10.9%	8.5%
4 or more	0.0%	1.9%	2.8%	2.9%	2.5%	2.5%
	0.1%	35.8%	31.4%	15.1%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
 NUMBER INJURED IN CRASH BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured	0.0%	2.2%	2.0%	1.6%	1.1%	1.9%
1	0.0%	57.1%	61.6%	62.4%	59.9%	59.8%
2	50.0%	24.3%	20.4%	25.2%	24.9%	23.4%
3	0.0%	10.3%	9.7%	6.9%	8.7%	9.3%
4	0.0%	3.3%	3.1%	2.6%	3.1%	3.1%
5 or more	50.0%	2.8%	3.0%	1.3%	2.2%	2.6%
	0.1%	35.8%	31.4%	15.1%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER INJURED IN VEHICLE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured	0.0%	29.8%	35.2%	47.7%	37.3%	35.5%
1	0.0%	49.7%	50.3%	43.1%	50.4%	49.0%
2	50.0%	14.4%	10.4%	7.2%	9.2%	11.2%
3	0.0%	4.0%	2.5%	1.6%	2.2%	2.9%
4 or more	50.0%	2.1%	1.6%	0.3%	0.8%	1.5%
	0.1%	35.8%	31.4%	15.1%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF PERSONS INVOLVED (IN CRASH) BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
1	0.0%	16.3%	15.5%	8.3%	8.8%	13.5%
2	50.0%	32.0%	33.8%	40.9%	40.6%	35.4%
3	0.0%	25.1%	23.3%	25.4%	22.7%	24.1%
4	0.0%	13.1%	12.3%	14.4%	16.9%	13.7%
5	0.0%	7.0%	8.3%	5.3%	6.8%	7.1%
6 or more	50.0%	6.5%	6.9%	5.7%	4.2%	6.1%
	0.1%	35.2%	31.8%	15.2%	17.7%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DAY OF WEEK BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Monday	0.0%	15.7%	14.7%	16.7%	15.5%	15.5%
Tuesday	100.0%	15.8%	14.2%	19.3%	12.3%	15.3%
Wednesday	0.0%	15.2%	12.3%	12.2%	19.3%	14.6%
Thursday	0.0%	13.2%	16.7%	14.8%	16.5%	15.1%
Friday	0.0%	18.3%	20.7%	20.7%	19.6%	19.7%
Saturday	0.0%	21.8%	21.4%	16.3%	16.8%	19.9%
Sunday	100.0%	20.0%	15.4%	13.0%	13.0%	16.2%
	0.1%	34.7%	31.6%	15.5%	18.1%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
WEEKDAY VERSUS WEEKEND BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Weekday	50.0%	65.2%	68.1%	74.1%	73.7%	68.9%
Weekend	50.0%	34.8%	31.9%	25.9%	26.3%	31.1%
	0.1%	35.9%	31.4%	15.0%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TIME PERIOD BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
12 am - 6 am	0.0%	16.6%	16.4%	7.9%	2.5%	12.7%
6 am - 12 pm	0.0%	18.8%	20.2%	27.6%	28.3%	22.2%
12 pm - 6 pm	0.0%	33.5%	35.9%	42.4%	49.6%	38.4%
6 pm - 12 am	100.0%	31.2%	27.6%	22.0%	19.6%	26.7%
	0.1%	35.6%	31.5%	15.1%	17.7%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TIME PERIOD BY WEEKDAY BY AGE GROUP

N=2145

	WEEKDAY					Total
	0-15	16-25	26-40	41-55	56-98	
12 am - 6 am	0.0%	10.6%	11.8%	4.5%	2.7%	8.5%
6 am - 12 pm	0.0%	20.0%	22.9%	29.5%	33.5%	25.0%
12 pm - 6 pm	0.0%	36.4%	38.7%	43.8%	46.8%	40.2%
6 pm - 12 am	100.0%	33.0%	26.6%	22.3%	17.1%	26.3%
	0.1%	33.8%	31.1%	16.1%	18.9%	100.0%

	WEEKEND					Total
	0-15	16-25	26-40	41-55	56-98	
12 am - 6 am	0.0%	27.7%	25.6%	16.5%	2.1%	21.7%
6 am - 12 pm	0.0%	16.5%	14.3%	22.8%	13.8%	16.1%
12 pm - 6 pm	0.0%	28.1%	30.0%	38.0%	57.4%	34.3%
6 pm - 12 am	100.0%	27.7%	30.0%	22.8%	26.6%	27.8%
	0.2%	39.8%	32.4%	12.6%	15.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RURAL/URBAN BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Urban	50.0%	21.9%	27.4%	29.4%	24.6%	25.2%
10% Rural	50.0%	25.4%	30.5%	29.7%	25.8%	27.8%
20% Rural	0.0%	18.6%	16.8%	16.7%	19.9%	17.9%
30% rural	0.0%	21.7%	16.2%	16.3%	22.7%	19.3%
70% Rural	0.0%	12.4%	9.1%	7.8%	7.0%	9.7%
	0.1%	35.8%	31.4%	15.1%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
 SPEED LIMIT IN MILES (AND KM/H) BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
0 (car-park, etc)	0.0%	1.3%	0.0%	0.0%	0.0%	0.4%
10 (17 km/h)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
15 (24 km/h)	0.0%	0.0%	0.7%	0.0%	0.5%	0.3%
20 (32 km/h)	0.0%	0.0%	0.3%	0.0%	0.5%	0.2%
25 (40 km/h)	0.0%	28.4%	33.9%	35.3%	23.8%	30.3%
30 (48 km/h)	0.0%	3.0%	1.7%	3.3%	1.6%	2.4%
35 (56 km/h)	100.0%	33.0%	33.9%	24.0%	35.7%	32.5%
40 (64 km/h)	0.0%	10.9%	6.1%	9.3%	11.4%	9.2%
45 (72 km/h)	0.0%	12.9%	13.6%	18.7%	17.8%	15.0%
50 (80 km/h)	0.0%	5.9%	3.4%	6.7%	6.5%	5.3%
55 (89 km/h)	0.0%	4.6%	6.4%	2.7%	2.2%	4.4%
	0.2%	32.4%	31.6%	16.0%	19.8%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
INTERSTATE HIGHWAY BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No (not on highway)	100.0%	96.6%	97.8%	96.4%	98.6%	97.3%
Yes (on highway)	0.0%	3.4%	2.2%	3.6%	1.4%	2.7%
	0.1%	35.8%	31.4%	15.1%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
LAND USE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Population 25,000-50,000	0.0%	13.3%	14.8%	13.2%	14.6%	14.0%
Population 50,000-100,000	0.0%	12.3%	12.9%	18.4%	20.2%	14.8%
Population 100,000+	50.0%	12.3%	17.5%	18.8%	11.8%	14.9%
Other area	50.0%	62.1%	54.8%	49.7%	53.4%	56.4%
	0.1%	35.8%	31.4%	15.0%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROADWAY ALIGNMENT BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Straight	50.0%	80.5%	81.2%	92.0%	93.6%	84.7%
Curve	50.0%	19.5%	18.8%	8.0%	6.4%	15.3%
	0.1%	35.8%	31.3%	15.2%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROADWAY PROFILE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Level	50.0%	71.9%	72.2%	76.2%	78.2%	73.8%
Grade	50.0%	25.7%	25.9%	22.3%	21.1%	24.5%
Hillcrest	0.0%	1.5%	1.5%	1.5%	0.7%	1.4%
Other	0.0%	0.8%	0.4%	0.0%	0.0%	0.4%
	0.1%	35.0%	31.5%	15.7%	17.7%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFICWAY FLOW BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Two way undivided		81.7%	82.3%	82.2%	88.9%	83.3%
Divided highway		14.8%	15.8%	16.0%	10.6%	14.5%
Oneway		3.5%	1.9%	1.8%	0.5%	2.2%
	0.0%	36.3%	31.3%	13.9%	18.5%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RELATION TO ROADWAY BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
On roadway	50.0%	68.0%	77.5%	89.4%	84.8%	77.1%
On shoulder/parking lane	0.0%	2.8%	2.7%	2.0%	2.3%	2.5%
Off roadway/shoulder/parking lane	50.0%	27.6%	18.4%	8.3%	11.8%	19.1%
On median	0.0%	1.7%	1.1%	0.3%	0.6%	1.1%
Other	0.0%	0.0%	0.3%	0.0%	0.6%	0.2%
	0.1%	35.9%	31.5%	15.0%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RELATION TO JUNCTION BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Non-junction	50.0%	50.2%	44.2%	38.0%	38.9%	44.5%
Intersection	50.0%	33.2%	34.3%	39.3%	38.9%	35.5%
Intersection related	0.0%	8.1%	12.3%	15.3%	11.5%	11.1%
Driveway/alley	0.0%	6.9%	8.5%	7.3%	10.1%	8.0%
Entrance/exit ramp	0.0%	0.8%	0.5%	0.0%	0.0%	0.5%
Other	0.0%	0.7%	0.3%	0.0%	0.6%	0.5%
	0.1%	35.7%	31.4%	15.0%	17.8%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF TRAVEL LANES BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
1	0.0%	3.5%	2.5%	3.8%	3.1%	3.1%
2	50.0%	69.3%	64.5%	64.1%	62.4%	65.7%
3	0.0%	7.8%	6.8%	7.1%	6.7%	7.1%
4	50.0%	16.8%	22.3%	21.8%	26.3%	21.1%
5	0.0%	2.1%	3.4%	3.2%	1.0%	2.5%
6	0.0%	0.5%	0.6%	0.0%	0.5%	0.5%
	0.2%	34.6%	32.8%	14.4%	17.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFIC CONTROL DEVICE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No controls	50.0%	66.4%	60.8%	57.6%	57.6%	61.7%
Traffic signals						
pedestrian signal not known	50.0%	18.2%	25.2%	26.0%	28.5%	23.4%
flashing traffic signal/beacon	0.0%	0.6%	0.2%	0.3%	0.3%	0.3%
unknown traffic signal	0.0%	0.3%	0.0%	0.0%	0.6%	0.2%
Regulatory, school zone or warning signs						
stop sign	0.0%	12.7%	13.1%	12.8%	11.9%	12.7%
yield sign	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%
warning sign	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
other sign	0.0%	0.1%	0.0%	0.3%	0.0%	0.1%
Miscellaneous (not at railroad crossing)	0.0%	0.3%	0.2%	1.0%	0.6%	0.4%
At railroad grade crossing						
active devices	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
passive devices	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Traffic controls present - no details	0.0%	0.4%	0.0%	0.0%	0.3%	0.2%
Other traffic controls	0.0%	0.6%	0.3%	1.6%	0.3%	0.6%
	0.1%	35.7%	31.3%	15.2%	17.7%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFIC DEVICE FUNCTIONING BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No controls	50.0%	68.6%	61.8%	58.9%	59.8%	63.4%
Device not functioning	0.0%	0.1%	0.5%	0.7%	0.0%	0.3%
Device functioning	50.0%	31.3%	37.8%	40.4%	40.2%	36.3%
	0.1%	35.5%	31.7%	15.2%	17.5%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
SEX OF DRIVER BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Male	100.0%	67.0%	62.1%	57.5%	55.7%	62.1%
Female	0.0%	33.0%	37.9%	42.5%	44.3%	37.9%
	0.1%	35.8%	31.4%	15.1%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ALCOHOL USE (DRIVER) BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	0.0%	7.8%	10.0%	2.3%	2.6%	6.7%
No alcohol involved	100.0%	92.2%	90.0%	97.7%	97.4%	93.3%
	0.1%	35.9%	31.3%	15.2%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ALCOHOL INVOLVEMENT IN CRASH BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	0.0%	9.6%	11.8%	5.3%	5.9%	9.0%
No alcohol involved	100.0%	90.4%	88.2%	94.7%	94.1%	91.0%
	0.1%	36.0%	31.2%	15.1%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DRIVER PHYSICAL/MENTAL IMPAIRMENT BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No impairment	100.0%	96.2%	97.4%	98.0%	98.0%	97.2%
Drowsy/fatigued	0.0%	1.8%	1.3%	1.0%	0.3%	1.2%
Ill/blackout	0.0%	0.1%	0.5%	0.7%	0.6%	0.4%
Hit-and-run vehicle	0.0%	1.1%	0.2%	0.3%	0.3%	0.5%
Physical/mental impairment - no details	0.0%	0.3%	0.5%	0.0%	0.3%	0.3%
Other physical/mental impairment	0.0%	0.4%	0.2%	0.0%	0.6%	0.3%
	0.1%	35.8%	31.3%	15.2%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DRIVER'S ACTION BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Not avoiding/swerving	100.0%	89.2%	93.0%	96.4%	96.1%	92.7%
Slippery/loose surface	0.0%	5.4%	4.3%	1.3%	2.5%	3.9%
Blowout	0.0%	0.3%	0.2%	0.3%	0.0%	0.2%
Debris/objects on road	0.0%	0.4%	0.2%	0.7%	0.0%	0.3%
Ruts/holes/bumps	0.0%	0.1%	0.2%	0.0%	0.0%	0.1%
Animals on road	0.0%	0.8%	0.5%	0.3%	0.6%	0.6%
Vehicle on road	0.0%	1.2%	0.9%	0.3%	0.3%	0.8%
Phantom vehicle	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Pedestrian/cyclist	0.0%	0.1%	0.0%	0.0%	0.3%	0.1%
Water/snow/oil slick	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Hit-and run vehicle	0.0%	1.1%	0.2%	0.3%	0.3%	0.5%
Avoiding - no details	0.0%	0.7%	0.3%	0.0%	0.0%	0.3%
Other cause	0.0%	0.1%	0.3%	0.3%	0.0%	0.2%
	0.1%	35.9%	31.3%	15.1%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VIOLATIONS CHARGED BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
None	0.0%	66.9%	73.9%	84.7%	79.7%	74.0%
Alcohol/drugs	0.0%	5.3%	6.2%	1.0%	1.7%	4.3%
Speeding	0.0%	6.4%	4.6%	1.0%	0.8%	4.0%
Alcohol or drugs and speeding	0.0%	1.0%	1.1%	0.0%	0.0%	0.7%
Reckless driving	100.0%	1.4%	0.6%	0.7%	0.6%	1.0%
Driving with suspended licence	0.0%	0.7%	0.6%	0.7%	0.3%	0.6%
Failure to give way	0.0%	3.3%	2.2%	2.7%	5.4%	3.2%
Running traffic controls/stop sign	0.0%	1.9%	0.9%	1.7%	2.8%	1.7%
Other violation	0.0%	13.1%	9.8%	7.6%	8.7%	10.4%
	0.1%	35.8%	31.5%	15.0%	17.7%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF OCCUPANTS IN VEHICLE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
1	0.0%	50.8%	57.5%	64.8%	63.1%	57.1%
2	50.0%	23.6%	19.8%	14.5%	18.0%	20.1%
3	0.0%	7.1%	7.1%	6.9%	5.4%	6.8%
4	0.0%	4.5%	3.7%	2.6%	2.0%	3.5%
5 or more	50.0%	1.7%	1.4%	0.7%	0.6%	1.3%
Unknown (only injured reported)	0.0%	12.3%	10.5%	10.5%	11.0%	11.2%
	0.1%	35.7%	31.4%	15.1%	17.7%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAVEL SPEED OF VEHICLE IN MILES (AND KM/H) BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
Stationary	0.0%	30.4%	51.0%	59.3%	51.4%	46.6%
01 - 12 (01 - 20 km/h)	0.0%	10.7%	5.8%	12.3%	10.0%	9.5%
13 - 24 (21 - 40 km/h)	0.0%	17.0%	13.5%	8.6%	12.9%	13.4%
25 - 35 (41 - 60 km/h)	0.0%	17.9%	12.5%	7.4%	11.4%	12.8%
36 - 50 (61 - 80 km/h)	0.0%	14.3%	13.5%	11.1%	10.0%	12.5%
51 - 60 (81 - 100 km/h)	0.0%	5.4%	2.9%	1.2%	4.3%	3.5%
Over 60 (>100 km/h)	0.0%	4.5%	1.0%	0.0%	0.0%	1.6%
	0.0%	30.5%	28.3%	22.1%	19.1%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MODEL YEAR BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
1986 - 1989	0.0%	32.6%	41.5%	37.8%	39.2%	37.3%
1981 - 1985	50.0%	37.2%	31.1%	41.1%	34.7%	35.4%
1976 - 1980	50.0%	22.3%	20.7%	16.1%	22.2%	20.9%
1971 - 1975	0.0%	5.4%	4.1%	3.7%	2.8%	4.3%
1974 and earlier	0.0%	2.5%	2.6%	1.3%	1.1%	2.1%
	0.1%	36.0%	31.3%	14.9%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE DEFECTS BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No vehicle defects	100.0%	97.8%	97.9%	98.7%	98.0%	98.0%
Tyres	0.0%	0.3%	0.5%	0.3%	0.0%	0.3%
Brakes	0.0%	0.4%	0.6%	0.0%	0.6%	0.4%
Steering	0.0%	0.3%	0.0%	0.0%	0.3%	0.1%
Signal lights	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%
Hit-and-run vehicle	0.0%	0.8%	0.3%	0.7%	0.3%	0.5%
Defects (no details)	0.0%	0.4%	0.2%	0.0%	0.6%	0.3%
Other vehicle defects	0.0%	0.0%	0.3%	0.3%	0.3%	0.2%
	0.1%	36.0%	31.3%	15.0%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
LIGHT CONDITIONS BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Daylight	0.0%	56.8%	58.9%	66.8%	82.1%	63.4%
Dark	0.0%	10.2%	8.0%	6.0%	3.4%	7.7%
Dark but lighted	100.0%	29.0%	29.4%	20.9%	12.3%	25.0%
Dawn	0.0%	0.8%	0.5%	2.0%	0.6%	0.9%
Dusk	0.0%	2.6%	2.9%	3.0%	1.1%	2.5%
Dawn or dusk	0.0%	0.6%	0.3%	1.3%	0.6%	0.6%
	0.1%	36.0%	31.2%	15.1%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ATMOSPHERIC CONDITIONS BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No adverse conditions	0.0%	77.3%	76.2%	76.3%	78.9%	77.0%
Rain	100.0%	16.0%	18.7%	19.3%	16.0%	17.4%
Sleet	0.0%	2.1%	1.6%	1.0%	1.4%	1.6%
Snow	0.0%	3.9%	2.5%	3.0%	3.4%	3.2%
Fog	0.0%	0.4%	0.3%	0.0%	0.3%	0.3%
Rain and fog	0.0%	0.1%	0.2%	0.0%	0.0%	0.1%
Other	0.0%	0.1%	0.5%	0.3%	0.0%	0.2%
	0.1%	35.9%	31.5%	15.0%	17.5%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VISUAL OBSTRUCTION BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No obstruction	100.0%	97.4%	98.7%	98.0%	97.7%	98.0%
Precipitation	0.0%	0.0%	0.2%	0.0%	0.3%	0.1%
Glare/sun/headlights	0.0%	0.4%	0.5%	0.3%	0.6%	0.4%
Curve/hill/embankment	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%
Building/billboard	0.0%	0.0%	0.2%	0.3%	0.0%	0.1%
Trees/crops/vegetation	0.0%	0.1%	0.0%	0.0%	0.3%	0.1%
Moving vehicle	0.0%	0.4%	0.0%	0.7%	0.0%	0.2%
Parked vehicle	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Broken/dirty windscreen	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
Hit-and-run vehicle	0.0%	1.1%	0.2%	0.3%	0.3%	0.5%
Vision obscured - no details	0.0%	0.1%	0.2%	0.3%	0.6%	0.2%
Other obstruction	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
	0.1%	35.9%	31.3%	15.1%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROAD SURFACE CONDITION BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Dry	0.0%	68.9%	67.8%	66.8%	68.6%	68.1%
Wet	100.0%	23.2%	25.2%	25.2%	27.4%	25.0%
Snow-slush	0.0%	1.8%	0.8%	1.3%	0.9%	1.2%
Ice	0.0%	5.7%	6.0%	6.3%	3.1%	5.4%
Sand/dirt/oil	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Other	0.0%	0.3%	0.2%	0.3%	0.0%	0.2%
	0.1%	35.9%	31.5%	15.0%	17.5%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE MANOEUVRE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Going straight	50.0%	53.4%	55.9%	53.9%	60.1%	55.4%
Slowing/stopping	0.0%	2.4%	2.4%	3.4%	2.3%	2.5%
Starting in traffic lane	0.0%	0.3%	0.8%	1.3%	0.9%	0.7%
Stopped in traffic lane	0.0%	4.7%	8.5%	16.2%	10.3%	8.6%
Passing/overtaking	0.0%	1.3%	0.8%	1.0%	0.3%	0.9%
Leaving parking spot	0.0%	0.4%	0.0%	0.3%	0.0%	0.2%
Entering parking spot	0.0%	0.1%	0.2%	0.0%	0.0%	0.1%
Avoiding animal/pedestrian/object	0.0%	3.8%	2.4%	1.3%	0.6%	2.4%
Turning right	0.0%	3.4%	2.7%	3.4%	2.3%	3.0%
Turning left	0.0%	13.4%	10.7%	11.4%	16.0%	12.7%
U-turn	0.0%	0.3%	0.6%	0.3%	0.6%	0.5%
Reversing	0.0%	1.0%	0.8%	1.3%	0.9%	1.0%
Changing lanes/merging	0.0%	0.8%	1.0%	0.7%	0.0%	0.7%
Negotiating curve	50.0%	8.1%	6.7%	2.0%	0.9%	5.5%
Other	0.0%	6.7%	6.4%	3.4%	5.1%	5.8%
	0.1%	36.0%	31.4%	14.9%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MANNER OF COLLISION BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Not collision with moving vehicle	50.0%	42.7%	38.1%	30.8%	30.6%	37.4%
Rear-end	0.0%	16.6%	17.4%	23.1%	20.5%	18.5%
Head-on	0.0%	3.5%	6.2%	5.0%	6.7%	5.1%
Angle	50.0%	35.5%	36.5%	39.5%	41.3%	37.5%
Sideswipe, same direction	0.0%	0.7%	0.8%	0.7%	0.8%	0.7%
Sideswipe, opposite direction	0.0%	1.0%	0.9%	1.0%	0.0%	0.8%
Other	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%
	0.1%	35.9%	31.4%	14.9%	17.7%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
FIRST HARMFUL EVENT (CRASH LEVEL) BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
Non collision	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rollover	0.0%	0.7%	1.1%	1.0%	0.0%	0.7%
Other non collision	0.0%	1.0%	0.8%	0.7%	0.3%	0.7%
Collision with object - not fixed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pedestrian	0.0%	5.8%	8.5%	9.9%	9.6%	7.9%
Cycle or cyclist	0.0%	4.7%	5.5%	9.6%	6.5%	6.0%
Motor vehicle on road	50.0%	57.3%	61.8%	69.2%	69.4%	62.6%
Motor vehicle parked	0.0%	2.3%	2.2%	1.7%	3.7%	2.4%
Other	0.0%	0.3%	1.1%	0.3%	0.0%	0.5%
Collision with fixed object	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Guardrail	50.0%	5.2%	2.7%	1.3%	0.8%	3.1%
Post/pole/support	0.0%	8.8%	5.7%	3.0%	4.5%	6.2%
Curb	0.0%	2.3%	0.9%	1.0%	0.8%	1.4%
Embankment	0.0%	1.0%	1.4%	0.0%	0.8%	0.9%
Wall	0.0%	0.8%	0.8%	0.3%	0.6%	0.7%
Tree	0.0%	5.5%	3.3%	0.7%	0.8%	3.3%
Other fixed object	0.0%	4.3%	4.2%	1.3%	2.2%	3.5%
	0.1%	35.9%	31.5%	14.9%	17.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MOST HARMFUL EVENT (VEHICLE LEVEL) BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Non-collision						
Rollover	0.0%	3.2%	2.7%	1.0%	0.6%	2.2%
Other non-collision	0.0%	0.8%	0.7%	0.3%	0.3%	0.6%
Collision with object - not fixed						
Pedestrian	0.0%	6.2%	9.2%	9.7%	10.1%	8.4%
Cyclist/cycle	0.0%	5.2%	5.8%	10.0%	6.8%	6.4%
Motor vehicle on road	100.0%	61.6%	64.1%	71.3%	72.0%	65.7%
Motor vehicle parked	0.0%	2.1%	2.6%	1.7%	3.3%	2.4%
Other object not fixed	0.0%	0.3%	0.7%	0.3%	0.0%	0.4%
Collision with fixed object						
Guardrail	0.0%	2.9%	1.7%	0.7%	0.6%	1.8%
Post/pole/support	0.0%	8.1%	5.3%	2.8%	3.0%	5.5%
Tree	0.0%	5.6%	3.7%	0.7%	1.2%	3.5%
Other fixed object	0.0%	4.1%	3.6%	1.4%	2.1%	3.2%
	0.1%	35.2%	31.4%	15.4%	18.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE ROLE BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
Single vehicle crashes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
non collision	0.0%	1.7%	1.3%	1.0%	0.3%	1.2%
striking	50.0%	38.0%	32.5%	22.9%	26.3%	32.0%
struck	0.0%	2.2%	3.8%	5.7%	2.8%	3.4%
both	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Multi vehicle crashes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
non collision	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%
striking	50.0%	31.8%	31.1%	26.3%	33.6%	31.1%
struck	0.0%	22.3%	26.0%	38.4%	33.3%	27.8%
both	0.0%	3.5%	5.3%	5.7%	3.7%	4.4%
	0.1%	35.8%	31.5%	14.9%	17.8%	100.0%

3 GENERAL ESTIMATES SYSTEM CASUALTY FILE (1989) - NORTH-WEST REGION: DAY/NIGHT COMPARISONS

Bivariate analyses which examined the similarities and differences between drivers of various age groups involved in reported casualty crashes in the USA for 1989 were reported in the previous chapter. There are numerous ways in which the data can be analysed and an important consideration is any age group differences arising as a result of the time of day, given the increased risk of night-time driving relative to driving during the day. The following chapter re-examines the casualty crash data with the following modifications:

- 'day' was operationally defined as the period between 6.00 am and 5.59 pm while 'night' was defined as the period between 6.00 pm and 5.59 am.
- all 'not known' cases (eg. not known age group, not known day of week, etc) were collapsed with all other missing cases. Missing and unknown cases make up approximately 10% of the total sample for most variables.

3.1 INTERPRETATION OF TABLES

A consistent pattern emerges when making day/night comparisons of crash involvement for young drivers by each variable. On average, 26-31% of drivers involved in daytime crashes were young drivers, while in night-time crashes they represented 38-44%. This pattern appears to hold for the US as well as Australian data.

When making day night comparisons from percentage tables, it is important also to refer to frequency tables (Appendix 3) in order to gain an idea of the sample sizes which these percentages represent. The following example has been included to illustrate the kind of supplementary information which can be extracted from frequency tables.

This example relates to the variable 'Relation to roadway' which indicates the location of the first harmful impact in the crash. From the frequency table (Appendix 3, p.156) it is apparent that from a total of 145 drivers involved in daytime crashes in the 'off roadway/shoulder/parking lane' category, 76 (52%) were young drivers. For night-time crashes in this 'off roadway' category, the total number of drivers increased to 238, which was also reflected in an increase in the number of young drivers involved (123, representing 52% of the night-time total). Hence, in absolute terms, there was an increase of about 62% in the number of young drivers involved in night-time, 'off roadway' crashes. This compares with a night-time increase of 18% for drivers in the 41-55 age group.

An increase in proportions is also apparent between young drivers involved in daytime (27%) and night-time (39%) crashes in the 'on roadway' category. The total number of drivers involved in night-time crashes within this category (n=511), however, is far less than the total number of drivers involved in similar daytime crashes (n=1037). Care must be exercised, therefore, in interpreting proportions resulting from different sample sizes because an apparently large proportional increase may actually address far fewer cases.

Ratio comparisons between drivers involved in 'off roadway' and 'on roadway' daytime crashes with those of corresponding night-time crashes is another way of interpreting the

results. The number of young drivers involved in daytime 'off roadway' crashes is 76, while young drivers involved in daytime 'on roadway' crashes is 286. This gives a ratio of 1:4. Where night-time crashes involving young drivers are concerned, the number involved in 'off roadway' collisions is 123 while the number involved in 'on roadway' collisions is 200, giving a ratio of 1:2. This difference between daytime and night-time ratios between 'off roadway' and 'on roadway' collisions clearly indicates that the probability of young drivers being involved in 'off roadway' crashes relative to crashes 'on road' is greater at night than during the day.

There are a few points to keep in mind when interpretation of these results are made:

- It is necessary to note the sample size or the number of cases present when making comparisons. For example, when making day/night comparisons, in most cases the sample size of drivers involved in night-time crashes is less than those of drivers involved in daytime crashes, despite the higher proportion of young drivers involved in night-time crashes.
- The number of years that make up each age group differ. For example, young drivers (16-25 years) covers ten years while the 26-55 age group covers 30 years. Thus, similar proportions between these age groups indicate an over-involvement of young drivers of almost three per year of age.
- The increase in young driver proportions involved in night-time crashes may be a result of any of the following reasons:
 - young drivers allocate a higher proportion of their total driving to night-time driving, and/or young drivers having a greater propensity to engage in risky driving behaviour at night
 - older drivers allocate a lower proportion of their total driving to night-time driving, and/or older drivers tend to engage in safe driving behaviour at night.

Hence, the over-involvement of one age group may be a result of a relative under-involvement of other age groups.

Variables and page numbers are listed here for the convenience of the reader:

3.2 TABLES - DAY/NIGHT COMPARISONS

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GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
 MAXIMUM INJURY SEVERITY (CRASH LEVEL) BY AGE GROUP

N = 2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Non-incapacitating injury	0.0%	68.8%	70.2%	67.9%	70.2%	69.4%
Incapacitating injury	0.0%	21.1%	17.3%	15.8%	18.5%	18.5%
Fatal injury	0.0%	2.2%	2.6%	3.8%	2.9%	2.8%
Unknown injury severity	0.0%	7.9%	9.8%	12.4%	8.4%	9.3%
	0.0%	30.8%	28.9%	17.4%	22.9%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Non-incapacitating injury	100.0%	68.2%	57.2%	57.8%	59.0%	40.6%
Incapacitating injury	0.0%	23.5%	31.2%	32.2%	21.8%	17.6%
Fatal injury	0.0%	1.8%	1.8%	1.1%	7.7%	1.5%
Unknown injury severity	0.0%	6.5%	9.8%	8.9%	11.5%	5.5%
	0.3%	43.0%	35.3%	11.5%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MAXIMUM INJURY SEVERITY (VEHICLE LEVEL) BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No injury	0.0%	32.7%	39.6%	45.4%	34.8%	37.4%
Possible injury	0.0%	5.7%	7.8%	8.7%	8.8%	7.5%
Non-incapacitating injury	0.0%	42.0%	36.7%	30.0%	39.9%	37.9%
Incapacitating injury	0.0%	11.7%	8.7%	8.2%	9.5%	9.7%
Fatal injury	0.0%	1.1%	1.4%	1.9%	1.8%	1.5%
Injured - severity unknown	0.0%	6.8%	5.8%	5.8%	5.1%	6.0%
	0.0%	30.8%	29.0%	17.4%	22.9%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No injury	0.0%	21.9%	26.8%	50.0%	41.0%	18.8%
Possible injury	0.0%	6.0%	5.4%	4.4%	6.4%	3.7%
Non-incapacitating injury	100.0%	49.2%	40.2%	30.0%	29.5%	27.4%
Incapacitating injury	0.0%	16.8%	18.8%	8.9%	11.5%	10.5%
Fatal injury	0.0%	1.2%	1.8%	1.1%	5.1%	1.2%
Injured - severity unknown	0.0%	4.8%	6.9%	5.6%	6.4%	3.8%
	0.3%	42.7%	35.4%	11.6%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF VEHICLES INVOLVED BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
1		0.0%	35.6%	27.8%	23.0%	27.7%	29.4%
2		0.0%	53.2%	57.9%	61.0%	57.2%	56.8%
3		0.0%	8.5%	10.7%	12.7%	12.2%	10.7%
4		0.0%	2.4%	3.1%	2.8%	2.5%	2.7%
5		0.0%	0.3%	0.6%	0.5%	0.4%	0.4%
		0.0%	30.7%	29.1%	17.4%	22.7%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
1		50.0%	48.7%	49.5%	46.2%	36.7%	30.8%
2		50.0%	45.5%	44.1%	42.9%	55.7%	29.7%
3		0.0%	4.7%	4.7%	8.8%	6.3%	3.4%
4		0.0%	0.0%	1.1%	2.2%	1.3%	0.5%
6		0.0%	1.2%	0.7%	0.0%	0.0%	0.5%
		0.3%	43.2%	35.1%	11.5%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER INJURED IN CRASH BY AGE GROUP

N = 2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No-one injured	0.0%	1.9%	2.8%	1.9%	1.1%	2.0%
1	0.0%	57.2%	60.1%	60.1%	57.9%	58.7%
2	0.0%	26.6%	21.1%	26.8%	28.1%	25.3%
3	0.0%	10.1%	11.2%	7.5%	7.6%	9.4%
4 or more	0.0%	4.3%	4.8%	3.8%	5.4%	4.6%
	0.0%	30.7%	29.1%	17.4%	22.7%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No-one injured	0.0%	2.0%	1.1%	1.1%	1.3%	1.0%
1	0.0%	56.6%	63.4%	67.0%	67.1%	39.7%
2	50.0%	22.4%	19.7%	22.0%	13.9%	13.4%
3	0.0%	10.8%	7.9%	5.5%	12.7%	6.1%
4 or more	50.0%	8.2%	7.9%	4.4%	5.1%	4.8%
	0.3%	43.2%	35.1%	11.5%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER INJURED IN VEHICLE BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
No-one injured		0.0%	34.3%	41.3%	46.9%	36.0%	38.9%
1		0.0%	48.1%	46.9%	43.7%	51.1%	47.7%
2		0.0%	13.0%	7.6%	7.5%	10.1%	9.8%
3 or more		0.0%	4.5%	4.2%	1.9%	2.9%	3.6%
		0.0%	30.7%	29.1%	17.4%	22.7%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
No-one injured		0.0%	24.2%	27.6%	50.5%	41.8%	19.5%
1		0.0%	51.6%	54.5%	40.7%	48.1%	33.0%
2		50.0%	16.3%	14.0%	6.6%	6.3%	8.7%
3 or more		50.0%	7.9%	3.9%	2.2%	3.8%	3.6%
		0.3%	43.2%	35.1%	11.5%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF PERSONS INVOLVED IN CRASH BY AGE GROUP

N = 2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
1		0.0%	12.5%	6.8%	3.3%	7.9%	8.2%
2		0.0%	31.0%	35.1%	44.5%	39.8%	36.5%
3		0.0%	29.8%	27.3%	27.5%	23.2%	27.2%
4		0.0%	12.8%	15.3%	11.5%	16.6%	14.2%
5		0.0%	7.6%	9.1%	7.1%	7.9%	8.0%
6 or more		0.0%	6.4%	6.5%	6.0%	4.6%	5.9%
		0.0%	31.0%	29.1%	17.2%	22.7%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
1		0.0%	20.8%	26.5%	18.8%	11.9%	13.8%
2		50.0%	32.6%	32.2%	32.5%	43.3%	21.3%
3		0.0%	20.1%	18.4%	21.3%	20.9%	12.5%
4		0.0%	13.3%	8.2%	21.3%	17.9%	8.1%
5		0.0%	6.5%	7.3%	1.3%	3.0%	3.7%
6 or more		50.0%	6.8%	7.3%	5.0%	3.0%	4.2%
		0.3%	41.5%	36.4%	11.9%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DAY OF WEEK BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Monday	0.0%	17.1%	19.2%	18.0%	14.4%	17.3%
Tuesday	0.0%	16.5%	15.4%	21.1%	14.0%	16.4%
Wednesday	0.0%	16.1%	12.9%	8.8%	17.2%	14.1%
Thursday	0.0%	13.4%	15.4%	15.5%	17.6%	15.3%
Friday	0.0%	19.3%	20.8%	21.1%	21.2%	20.5%
Saturday	0.0%	17.7%	16.4%	15.5%	15.6%	16.4%
Sunday	0.0%	16.8%	11.9%	9.3%	11.2%	12.7%
	0.0%	29.7%	29.3%	17.9%	23.1%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Monday	0.0%	13.7%	8.6%	13.5%	19.7%	7.5%
Tuesday	100.0%	15.1%	12.1%	14.9%	6.1%	7.9%
Wednesday	0.0%	14.4%	11.6%	21.6%	27.3%	9.3%
Thursday	0.0%	13.3%	18.5%	13.5%	12.1%	9.0%
Friday	0.0%	17.3%	20.7%	17.6%	13.6%	10.9%
Saturday	0.0%	26.3%	28.4%	18.9%	21.2%	15.4%
Sunday	100.0%	23.4%	20.3%	23.0%	19.7%	13.2%
	0.2%	42.7%	35.6%	11.4%	10.1%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
WEEKDAY VERSUS WEEKEND BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
Weekday		0.0%	70.5%	74.7%	77.4%	75.9%	74.1%
Weekend		0.0%	29.5%	25.3%	22.6%	24.1%	25.9%
		0.0%	30.8%	29.1%	17.3%	22.7%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
Weekday		50.0%	59.8%	59.5%	65.9%	65.8%	39.6%
Weekend		50.0%	40.2%	40.5%	34.1%	34.2%	25.4%
		0.3%	43.2%	35.1%	11.5%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TIME PERIOD BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
6 am - 12 pm		0.0%	44.4%	44.4%	48.4%	45.0%	45.2%
12 pm - 6 pm		0.0%	55.6%	55.6%	51.6%	55.0%	54.8%
		0.0%	30.7%	29.1%	17.4%	22.7%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
6 pm - 12 am		0.0%	65.3%	62.7%	73.6%	88.6%	43.8%
12 am - 6 am		0.0%	34.7%	37.3%	26.4%	11.4%	20.9%
		0.0%	43.3%	35.2%	11.5%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TIME PERIOD BY WEEKDAY/WEEKEND BY AGE GROUP

N = 2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
Weekday:	6 am - 12 pm		25.0%	27.8%	31.1%	31.7%	28.4%
	12 pm - 6 pm		45.5%	46.9%	46.2%	44.2%	45.7%
Weekend:	6 am - 12 pm		10.9%	8.1%	8.5%	4.7%	8.3%
	12 pm - 6 pm		18.6%	17.1%	14.2%	19.4%	17.6%
		0.0%	30.8%	29.1%	17.3%	22.7%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
Weekday:	12 am - 6 am	0.0%	14.6%	18.3%	11.0%	8.9%	14.9%
	6 pm - 12 am	50.0%	45.2%	41.2%	54.9%	57.0%	46.1%
Weekend:	12 am - 6 am	0.0%	20.1%	18.6%	14.3%	2.5%	17.1%
	6 pm - 12 am	50.0%	20.1%	21.9%	19.8%	31.6%	21.9%
		0.3%	43.2%	35.1%	11.5%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RURAL/URBAN BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Urban	0.0%	19.1%	28.9%	23.9%	22.7%	23.6%
10% Rural	0.0%	25.3%	30.6%	31.5%	26.3%	28.1%
20% Rural	0.0%	19.1%	16.9%	16.0%	19.4%	18.0%
30% Rural	0.0%	23.1%	14.9%	20.7%	23.7%	20.4%
70% Rural	0.0%	13.3%	8.7%	8.0%	7.9%	9.8%
	0.0%	30.7%	29.1%	17.4%	22.7%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Urban	50.0%	24.8%	25.1%	40.7%	31.6%	17.8%
10% Rural	50.0%	25.4%	30.5%	26.4%	24.1%	17.7%
20% Rural	0.0%	18.4%	16.8%	18.7%	21.5%	11.8%
30% Rural	0.0%	19.8%	17.9%	6.6%	19.0%	11.4%
70% Rural	0.0%	11.7%	9.7%	7.7%	3.8%	6.3%
	0.3%	43.2%	35.1%	11.5%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
SPEED LIMIT(IN MILES AND KM/H) BY AGE GROUP

N = 2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
0	(car-park, etc)	0.0%	2.3%	0.0%	0.0%	0.0%	0.7%
10	(17 km/h)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
15	(24 km/h)	0.0%	0.0%	0.6%	0.0%	0.7%	0.3%
20	(32 km/h)	0.0%	0.0%	0.0%	0.0%	0.7%	0.2%
25	(40 km/h)	0.0%	25.6%	30.6%	30.3%	23.1%	27.3%
30	(48 km/h)	0.0%	2.9%	2.4%	3.7%	0.7%	2.3%
35	(56 km/h)	0.0%	30.2%	35.3%	26.6%	35.4%	32.3%
40	(64 km/h)	0.0%	14.0%	5.9%	9.2%	13.6%	10.7%
45	(72 km/h)	0.0%	15.1%	15.9%	22.9%	18.4%	17.6%
50	(80 km/h)	0.0%	6.4%	2.9%	5.5%	6.1%	5.2%
55	(89 km/h)	0.0%	3.5%	6.5%	1.8%	1.4%	3.5%
		0.0%	28.8%	28.4%	18.2%	24.6%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
15	(24 km/h)	0.0%	0.0%	0.8%	0.0%	0.0%	0.2%
20	(32 km/h)	0.0%	0.0%	0.8%	0.0%	0.0%	0.2%
25	(40 km/h)	0.0%	31.0%	38.4%	48.7%	26.3%	19.4%
30	(48 km/h)	0.0%	3.2%	0.8%	2.6%	5.3%	1.3%
35	(56 km/h)	100.0%	37.3%	32.0%	17.9%	36.8%	18.4%
40	(64 km/h)	0.0%	6.3%	6.4%	7.7%	2.6%	3.3%
45	(72 km/h)	0.0%	10.3%	10.4%	7.7%	15.8%	5.9%
50	(80 km/h)	0.0%	5.6%	4.0%	10.3%	7.9%	3.2%
55	(89 km/h)	0.0%	6.3%	6.4%	5.1%	5.3%	3.3%
		0.6%	38.2%	37.9%	11.8%	11.5%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
INTERSTATE HIGHWAY BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
No (not on highway)		0.0%	95.7%	97.5%	97.7%	98.9%	97.3%
Yes (on highway)		0.0%	4.3%	2.5%	2.3%	1.1%	2.7%
		0.0%	30.7%	29.1%	17.4%	22.7%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
No (not on highway)		100.0%	97.4%	98.2%	93.4%	97.5%	63.0%
Yes (on highway)		0.0%	2.6%	1.8%	6.6%	2.5%	1.8%
		0.3%	43.1%	35.2%	11.5%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
LAND USE BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Population 25000-50000	0.0%	11.8%	13.5%	13.7%	14.1%	13.1%
Population 50000-100000	0.0%	13.4%	13.2%	17.0%	19.5%	15.4%
Population 100000+	0.0%	9.1%	16.9%	14.6%	9.4%	12.4%
Other Area	0.0%	65.8%	56.3%	54.7%	57.0%	59.1%
	0.0%	30.7%	29.1%	17.4%	22.7%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Population 25000-50000	0.0%	15.2%	16.5%	12.2%	16.5%	10.0%
Population 50000-100000	0.0%	11.1%	12.5%	22.2%	22.8%	9.1%
Population 100000+	50.0%	15.8%	18.3%	27.8%	20.3%	12.1%
Other Area	50.0%	57.8%	52.7%	37.8%	40.5%	33.7%
	0.3%	43.1%	35.3%	11.4%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROADWAY ALIGNMENT BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
Straight Curve		0.0%	83.7%	85.1%	91.5%	95.1%	88.0%
		0.0%	16.3%	14.9%	8.5%	4.9%	12.0%
		0.0%	30.8%	29.2%	17.7%	22.3%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
Straight Curve		50.0%	77.2%	76.0%	93.1%	88.6%	79.7%
		50.0%	22.8%	24.0%	6.9%	11.4%	20.3%
		0.3%	43.4%	34.8%	11.3%	10.3%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROADWAY PROFILE BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Level	0.0%	70.2%	73.3%	73.5%	76.8%	73.2%
Grade	0.0%	27.6%	25.0%	24.3%	22.3%	25.1%
Hillcrest	0.0%	1.6%	1.7%	2.2%	0.9%	1.5%
Other	0.0%	0.6%	0.0%	0.0%	0.0%	0.2%
	0.0%	30.8%	28.9%	17.8%	22.5%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Level	50.0%	73.9%	71.0%	83.3%	83.1%	46.2%
Grade	50.0%	23.9%	26.8%	16.7%	16.9%	14.5%
Hillcrest	0.0%	1.5%	1.3%	0.0%	0.0%	0.7%
Other	0.0%	0.8%	0.9%	0.0%	0.0%	0.4%
	0.3%	41.3%	36.1%	12.2%	10.2%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFICWAY FLOW BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Two way undivided	0.0%	83.5%	81.0%	85.0%	88.3%	84.2%
Divided highway	0.0%	15.2%	18.0%	12.5%	11.1%	14.6%
Oneway	0.0%	1.3%	0.9%	2.5%	0.6%	1.2%
	0.0%	30.9%	29.1%	16.5%	23.6%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Two way undivided	0.0%	79.5%	84.1%	76.2%	91.3%	50.3%
Divided highway	0.0%	14.5%	12.7%	23.8%	8.7%	8.7%
Oneway	0.0%	6.0%	3.2%	0.0%	0.0%	2.3%
	0.0%	44.9%	35.3%	9.4%	10.3%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RELATION TO ROADWAY BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
On roadway	0%	76.3%	89.3%	92.5%	85.9%	85.1%
On shoulder/parking lane	0%	2.4%	2.0%	1.9%	2.5%	2.2%
Off roadway/shoulder/parking lane	0%	20.3%	7.9%	5.2%	10.8%	11.9%
On median	0%	1.1%	0.3%	0.5%	0.4%	0.6%
Other	0%	0.0%	0.6%	0.0%	0.4%	0.2%
	0.0%	30.6%	29.1%	17.4%	22.7%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
On roadway	50%	58%	62%	83%	81%	41.9%
On shoulder/parking lane	0%	3%	4%	2%	1%	2.0%
Off roadway/shoulder/parking lane	50%	36%	32%	15%	15%	19.5%
On median	0%	2%	2%	0%	1%	1.2%
Other	0%	0%	0%	0%	1%	0.1%
	0.3%	43.3%	35.4%	11.2%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RELATION TO JUNCTION BY AGE GROUP

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Non-junction	0.0%	45.5%	37.3%	34.0%	38.8%	39.6%
Intersection	0.0%	34.1%	39.0%	42.1%	39.1%	38.1%
Intersection related	0.0%	9.5%	13.0%	19.1%	12.7%	12.9%
Driveway/alley	0.0%	9.8%	10.5%	4.8%	8.7%	8.9%
Entrance/exit ramp	0.0%	0.5%	0.0%	0.0%	0.0%	0.2%
Other	0.0%	0.5%	0.3%	0.0%	0.7%	0.4%
	0.0%	30.5%	29.3%	17.3%	22.8%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Non-junction	50.0%	55.1%	53.3%	47.2%	39.2%	33.4%
Intersection	50.0%	32.4%	28.3%	32.6%	38.0%	20.4%
Intersection related	0.0%	6.8%	11.4%	6.7%	7.6%	5.5%
Driveway/alley	0.0%	3.6%	5.5%	13.5%	15.2%	4.2%
Entrance/exit ramp	0.0%	1.2%	1.1%	0.0%	0.0%	0.6%
Other	0.0%	0.9%	0.4%	0.0%	0.0%	0.3%
	0.3%	43.2%	35.0%	11.4%	10.2%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF TRAVEL LANES BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
1		0.0%	2.7%	1.5%	4.7%	3.3%	2.8%
2		0.0%	70.5%	60.6%	64.2%	62.3%	64.4%
3		0.0%	8.7%	8.6%	4.7%	6.6%	7.5%
4		0.0%	16.9%	26.8%	22.6%	27.2%	23.4%
5		0.0%	1.1%	2.5%	3.8%	0.0%	1.7%
6		0.0%	0.0%	0.0%	0.0%	0.7%	0.2%
		0.0%	28.7%	31.0%	16.6%	23.7%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
1		0.0%	4.2%	3.8%	2.0%	2.3%	2.5%
2		50.0%	67.9%	69.4%	63.3%	62.8%	46.6%
3		0.0%	6.8%	4.5%	12.2%	7.0%	4.5%
4		50.0%	16.8%	16.6%	20.4%	23.3%	12.4%
5		0.0%	3.2%	4.5%	2.0%	4.7%	2.5%
6		0.0%	1.1%	1.3%	0.0%	0.0%	0.6%
		0.5%	43.1%	35.6%	11.1%	9.8%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFIC CONTROL DEVICE BY AGE GROUP

N=2145

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
No controls	0.0%	67.7%	57.3%	54.5%	57.8%	60.1%
Traffic signals						
pedestrian signal not known	0.0%	17.2%	27.4%	27.5%	27.6%	24.3%
flashing traffic controls/beacon	0.0%	0.5%	0.0%	0.5%	0.4%	0.3%
unknown traffic signal	0.0%	0.5%	0.0%	0.0%	0.7%	0.3%
Regulatory, school zone or warning signs						
stop sign	0.0%	12.6%	14.4%	13.7%	12.4%	13.3%
yield sign	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%
other sign	0.0%	0.3%	0.0%	0.5%	0.0%	0.2%
Miscellaneous (not at railroad crossing)	0.0%	0.5%	0.3%	1.4%	0.4%	0.6%
At railroad crossing						
active devices	0.0%	0.0%	0.0%	0.5%	0.0%	0.1%
Traffic controls present - no details	0.0%	0.3%	0.0%	0.0%	0.4%	0.2%
Other traffic control	0.0%	0.3%	0.3%	1.4%	0.4%	0.5%
	0.0%	30.7%	29.2%	17.4%	22.7%	100.0%

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
No controls	50.0%	65.0%	65.2%	64.8%	57.0%	41.4%
Traffic signals						
pedestrian signal not known	50.0%	19.3%	22.3%	22.0%	31.6%	14.2%
flashing traffic controls/beacon	0.0%	0.6%	0.4%	0.0%	0.0%	0.2%
unknown traffic signal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Regulatory, school zone or warning signs						
stop sign	0.0%	12.8%	11.4%	11.0%	10.1%	7.6%
yield sign	0.0%	0.0%	0.4%	0.0%	0.0%	0.1%
warning sign	0.0%	0.6%	0.0%	0.0%	0.0%	0.2%
Miscellaneous (not at railroad crossing)	0.0%	0.0%	0.0%	0.0%	1.3%	0.1%
At railroad crossing						
passive devices	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Traffic controls present - no details	0.0%	0.6%	0.0%	0.0%	0.0%	0.2%
Other traffic control	0.0%	0.9%	0.4%	2.2%	0.0%	0.5%
	0.3%	43.1%	34.9%	11.6%	10.1%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFIC DEVICE FUNCTIONING BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No controls	0.0%	69.6%	58.3%	55.6%	59.8%	61.6%
Device not functioning	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Device functioning	0.0%	30.1%	41.7%	44.4%	40.2%	38.3%
	0.0%	30.6%	29.4%	17.5%	22.5%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No controls	50.0%	67.4%	66.2%	66.3%	60.0%	42.4%
Device not functioning	0.0%	0.0%	1.1%	2.2%	0.0%	0.4%
Device functioning	50.0%	32.6%	32.7%	31.5%	40.0%	21.4%
	0.3%	42.8%	35.4%	11.7%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
SEX OF DRIVER BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
Male		0.0%	61.4%	55.6%	53.5%	54.7%	56.8%
Female		0.0%	38.6%	44.4%	46.5%	45.3%	43.2%
		0.0%	30.7%	29.1%	17.4%	22.7%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
Male		100.0%	72.6%	70.3%	67.0%	59.5%	45.4%
Female		0.0%	27.4%	29.7%	33.0%	40.5%	19.5%
		0.3%	43.2%	35.1%	11.5%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ALCOHOL USE (DRIVER) BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved		0.0%	1.9%	2.3%	0.5%	1.5%	1.7%
No alcohol involved		0.0%	98.1%	97.7%	99.5%	98.5%	98.3%
		0.0%	30.8%	29.0%	17.5%	22.6%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved		0.0%	14.3%	19.9%	6.8%	6.5%	9.3%
No alcohol involved		100.0%	85.7%	80.1%	93.2%	93.5%	54.5%
		0.3%	43.3%	35.1%	11.4%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ALCOHOL INVOLVEMENT IN CRASH BY AGE GROUP

N=2145

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	0.0%	2.9%	3.7%	1.9%	4.4%	3.3%
No alcohol involved	0.0%	97.1%	96.3%	98.1%	95.6%	96.7%
	0.0%	30.8%	29.1%	17.5%	22.7%	100.0%

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	0.0%	16.8%	22.3%	13.5%	11.5%	11.4%
No alcohol involved	100.0%	83.2%	77.7%	86.5%	88.5%	53.0%
	0.3%	43.5%	34.9%	11.4%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DRIVER PHYSICAL/MENTAL IMPAIRMENT BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No impairment	0.0%	97.0%	98.9%	98.1%	97.8%	97.9%
Drowsy/fatigued	0.0%	2.2%	0.3%	0.9%	0.4%	1.0%
Ill/blackout	0.0%	0.0%	0.8%	0.5%	0.7%	0.5%
Hit-and-run vehicle	0.0%	0.5%	0.0%	0.5%	0.0%	0.2%
Physical/mental impairment - no details	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%
Other physical/mental impairment	0.0%	0.3%	0.0%	0.0%	0.7%	0.2%
	0.0%	30.6%	29.2%	17.5%	22.7%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No impairment	100.0%	95.3%	95.6%	97.8%	98.7%	61.6%
Drowsy/fatigued	0.0%	1.5%	2.6%	1.1%	0.0%	1.1%
Ill/blackout	0.0%	0.3%	0.0%	1.1%	0.0%	0.2%
Hit-and-run vehicle	0.0%	1.8%	0.4%	0.0%	1.3%	0.7%
Physical/mental impairment - no details	0.0%	0.6%	1.1%	0.0%	0.0%	0.4%
Other physical/mental impairment	0.0%	0.6%	0.4%	0.0%	0.0%	0.2%
	0.3%	43.4%	34.9%	11.4%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DRIVER'S ACTION BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Not avoiding/swerving	0.0%	92.2%	94.1%	97.2%	96.4%	94.6%
Slippery or loose surface	0.0%	5.1%	3.7%	0.9%	2.9%	3.4%
Blowout	0.0%	0.3%	0.3%	0.5%	0.0%	0.2%
Ruts/holes/bumps	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%
Animals on road	0.0%	0.3%	0.6%	0.0%	0.4%	0.3%
Vehicle on road	0.0%	0.5%	0.8%	0.5%	0.4%	0.6%
Pedestrian/cyclist/non-motorist	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Water/snow/oil slick	0.0%	0.5%	0.0%	0.0%	0.0%	0.2%
Hit-and-run vehicle	0.0%	0.5%	0.0%	0.5%	0.0%	0.2%
Avoiding action - no details	0.0%	0.3%	0.3%	0.0%	0.0%	0.2%
Other cause	0.0%	0.0%	0.0%	0.5%	0.0%	0.1%
	0.0%	30.6%	29.1%	17.5%	22.7%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Not avoiding/swerving	100.0%	86.0%	91.7%	94.4%	94.9%	58.0%
Slippery or loose surface	0.0%	5.8%	5.1%	2.2%	1.3%	3.0%
Blowout	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Debris-object on road	0.0%	0.9%	0.4%	2.2%	0.0%	0.5%
Ruts/holes/bumps	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Animals on road	0.0%	1.5%	0.4%	1.1%	1.3%	0.7%
Vehicle on road	0.0%	2.0%	1.1%	0.0%	0.0%	0.8%
Phantom vehicle	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Pedestrian/cyclist/non-motorist	0.0%	0.0%	0.0%	0.0%	1.3%	0.1%
Hit-and-run vehicle	0.0%	1.8%	0.4%	0.0%	1.3%	0.7%
Avoiding action - no details	0.0%	0.9%	0.4%	0.0%	0.0%	0.3%
Other cause	0.0%	0.3%	0.7%	0.0%	0.0%	0.2%
	0.3%	43.5%	35.1%	11.3%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VIOLATIONS CHARGED (DRIVER) BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
None	0.0%	70.4%	78.8%	86.7%	79.7%	77.8%
Alcohol/drugs	0.0%	0.5%	2.0%	0.0%	0.7%	0.9%
Speeding	0.0%	5.9%	4.5%	1.0%	1.1%	3.5%
Reckless driving	0.0%	1.3%	0.3%	0.5%	0.7%	0.7%
Driving with suspended licence	0.0%	0.5%	0.8%	1.0%	0.0%	0.6%
Failure to give way	0.0%	4.3%	2.3%	2.4%	4.3%	3.4%
Running traffic controls/stop sign	0.0%	1.3%	1.4%	1.9%	3.3%	1.9%
Other violation	0.0%	15.6%	9.9%	6.7%	10.1%	11.1%
	0.0%	30.7%	29.2%	17.3%	22.8%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
None	0.0%	62.4%	67.6%	79.8%	79.7%	44.1%
Alcohol/drugs	0.0%	10.6%	11.5%	3.4%	5.1%	6.2%
Speeding	0.0%	7.1%	4.7%	1.1%	0.0%	3.1%
Alcohol or drugs and speeding	0.0%	2.1%	2.5%	0.0%	0.0%	1.2%
Reckless driving	100.0%	1.5%	1.1%	1.1%	0.0%	0.9%
Driving with suspended licence	0.0%	0.9%	0.4%	0.0%	1.3%	0.4%
Failure to give way	0.0%	2.4%	2.2%	3.4%	8.9%	2.0%
Running traffic controls/stop sign	0.0%	2.6%	0.4%	1.1%	1.3%	1.0%
Other violation	0.0%	10.6%	9.7%	10.1%	3.8%	6.2%
	0.3%	43.1%	35.3%	11.3%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF OCCUPANT IN VEHICLE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
1	0.0%	53.0%	58.4%	65.4%	60.9%	58.5%
2	0.0%	24.5%	18.5%	15.6%	19.9%	20.2%
3	0.0%	5.9%	6.8%	6.2%	5.8%	6.2%
4 or more	0.0%	6.2%	5.4%	2.4%	2.9%	4.5%
Unknown (only injured reported)	0.0%	10.5%	10.8%	10.4%	10.5%	10.6%
	0.0%	30.7%	29.0%	17.4%	22.8%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
1	0.0%	47.9%	56.1%	62.6%	70.9%	35.6%
2	50.0%	23.1%	21.6%	12.1%	11.4%	13.1%
3	0.0%	8.3%	7.6%	8.8%	3.8%	5.0%
4 or more	50.0%	6.2%	4.7%	5.5%	1.3%	3.4%
Unknown (only injured reported)	0.0%	14.5%	10.1%	11.0%	12.7%	8.0%
	0.3%	42.9%	35.3%	11.5%	10.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAVEL SPEED OF VEHICLE IN MILES (AND KM/H) BY AGE GROUP

N = 2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
Stationary		0.0%	36.9%	58.7%	68.3%	53.4%	54.2%
01 - 12	(01 - 20 km/h)	0.0%	10.8%	4.8%	9.5%	10.3%	8.8%
13 - 24	(21 - 40 km/h)	0.0%	15.4%	7.9%	4.8%	15.5%	10.8%
25 - 35	(41 - 60 km/h)	0.0%	20.0%	14.3%	7.9%	6.9%	12.4%
36 - 50	(61 - 80 km/h)	0.0%	15.4%	9.5%	7.9%	10.3%	10.8%
51 - 60	(81 - 100 km/h)	0.0%	1.5%	4.8%	1.6%	3.4%	2.8%
		0.0%	26.1%	25.3%	25.3%	23.3%	100.0%

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
Stationary		0.0%	21.7%	39.0%	29.4%	41.7%	14.5%
01 - 12	(01 - 20 km/h)	0.0%	10.9%	7.3%	23.5%	8.3%	5.2%
13 - 24	(21 - 40 km/h)	0.0%	19.6%	22.0%	23.5%	0.0%	8.8%
25 - 35	(41 - 60 km/h)	0.0%	13.0%	9.8%	5.9%	33.3%	6.0%
36 - 50	(61 - 80 km/h)	0.0%	13.0%	19.5%	17.6%	8.3%	7.2%
51 - 60	(81 - 100 km/h)	0.0%	10.9%	0.0%	0.0%	8.3%	2.4%
Over 60	(>100 km/h)	0.0%	10.9%	2.4%	0.0%	0.0%	2.4%
		0.0%	39.7%	35.3%	14.7%	10.3%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MODEL YEAR BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
1986 - 1989	0.0%	33.7%	44.3%	38.6%	38.4%	38.7%
1981 - 1985	0.0%	34.0%	30.4%	41.5%	34.8%	34.4%
1976 - 1980	0.0%	23.3%	19.0%	15.9%	23.2%	20.8%
1971 - 1975	0.0%	5.6%	4.3%	2.9%	2.2%	4.0%
1974 and earlier	0.0%	3.5%	2.0%	1.0%	1.4%	2.2%
	0.0%	30.9%	29.1%	17.1%	22.8%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
1986 - 1989	0.0%	31.0%	38.0%	36.3%	42.1%	22.7%
1981 - 1985	50.0%	41.0%	32.1%	40.7%	34.2%	24.1%
1976 - 1980	50.0%	21.5%	22.6%	15.4%	18.4%	13.6%
1971 - 1975	0.0%	5.0%	4.0%	5.5%	5.3%	3.1%
1974 and earlier	0.0%	1.5%	3.3%	2.2%	0.0%	1.3%
	0.3%	43.4%	35.0%	11.6%	9.7%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE DEFECTS BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No vehicle defects	0.0%	98.7%	98.0%	99.0%	97.8%	98.4%
Tyres	0.0%	0.3%	0.8%	0.5%	0.0%	0.4%
Brakes	0.0%	0.0%	0.8%	0.0%	0.7%	0.4%
Steering	0.0%	0.3%	0.0%	0.0%	0.4%	0.2%
Hit-and-run vehicle	0.0%	0.5%	0.3%	0.5%	0.0%	0.3%
Vehicle defects - no details	0.0%	0.3%	0.0%	0.0%	0.7%	0.2%
Other vehicle defect	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%
	0.0%	30.8%	29.1%	17.3%	22.8%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No vehicle defects	100.0%	96.8%	97.8%	97.8%	98.7%	63.2%
Tyres	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Brakes	0.0%	0.9%	0.4%	0.0%	0.0%	0.3%
Steering	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Signal lights	0.0%	0.0%	0.4%	0.0%	0.0%	0.1%
Hit-and-run vehicle	0.0%	1.2%	0.4%	1.1%	1.3%	0.6%
Vehicle defects - no details	0.0%	0.6%	0.4%	0.0%	0.0%	0.2%
Other vehicle defect	0.0%	0.0%	0.7%	1.1%	0.0%	0.2%
	0.3%	43.5%	34.9%	11.4%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
LIGHT CONDITIONS BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Daylight	0.0%	94.9%	95.1%	90.4%	96.4%	94.5%
Dark	0.0%	1.3%	0.0%	1.4%	0.4%	0.7%
Dark but lighted	0.0%	0.8%	3.2%	3.8%	1.8%	2.2%
Dawn	0.0%	1.3%	0.9%	2.4%	0.7%	1.2%
Dusk	0.0%	1.1%	0.9%	1.4%	0.4%	0.9%
Dawn or dusk	0.0%	0.5%	0.0%	0.5%	0.4%	0.3%
	0.0%	30.8%	28.9%	17.4%	22.9%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Daylight	0.0%	14.7%	13.1%	11.1%	29.3%	9.8%
Dark	0.0%	20.1%	18.2%	16.7%	14.7%	12.0%
Dark but lighted	100.0%	59.9%	62.4%	61.1%	50.7%	39.0%
Dawn	0.0%	0.3%	0.0%	1.1%	0.0%	0.2%
Dusk	0.0%	4.4%	5.5%	6.7%	4.0%	3.2%
Dawn or dusk	0.0%	0.6%	0.7%	3.3%	1.3%	0.7%
	0.3%	43.5%	35.1%	11.5%	9.6%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ATMOSPHERIC CONDITIONS BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No adverse conditions	0.0%	76.5%	77.8%	75.1%	79.2%	77.3%
Rain	0.0%	17.6%	17.0%	22.0%	15.3%	17.7%
Sleet	0.0%	1.9%	1.1%	0.5%	1.1%	1.2%
Snow	0.0%	3.2%	2.6%	1.9%	4.0%	3.0%
Fog	0.0%	0.5%	0.6%	0.0%	0.4%	0.4%
Other	0.0%	0.3%	0.9%	0.5%	0.0%	0.4%
	0.0%	30.7%	29.2%	17.3%	22.7%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No adverse conditions	0.0%	77.6%	74.0%	78.7%	77.9%	49.7%
Rain	100.0%	14.7%	20.9%	13.5%	18.2%	11.3%
Sleet	0.0%	2.4%	2.2%	2.2%	2.6%	1.5%
Snow	0.0%	4.7%	2.5%	5.6%	1.3%	2.4%
Fog	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Rain and fog	0.0%	0.3%	0.4%	0.0%	0.0%	0.2%
	0.3%	43.3%	35.3%	11.3%	9.8%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VISUAL OBSTRUCTION BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No obstruction	0.0%	97.0%	98.9%	97.7%	97.8%	97.9%
Precipitation	0.0%	0.0%	0.3%	0.0%	0.4%	0.2%
Glare/sun/headlights	0.0%	0.8%	0.6%	0.5%	0.7%	0.7%
Building/billboard	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%
Trees/crops/vegetation	0.0%	0.3%	0.0%	0.0%	0.4%	0.2%
Moving vehicle	0.0%	0.5%	0.0%	0.9%	0.0%	0.3%
Parked vehicle	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Hit-and-run vehicle	0.0%	0.5%	0.0%	0.5%	0.0%	0.2%
Vision obscured - no details	0.0%	0.3%	0.0%	0.5%	0.7%	0.3%
Other obstruction	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
	0.0%	30.6%	29.1%	17.5%	22.8%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No obstruction	100.0%	97.7%	98.5%	98.9%	97.4%	63.3%
Glare/sun/headlights	0.0%	0.0%	0.4%	0.0%	0.0%	0.1%
Curve/hill/embankment	0.0%	0.0%	0.4%	0.0%	0.0%	0.1%
Building/billboard	0.0%	0.0%	0.0%	1.1%	0.0%	0.1%
Moving vehicle	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Parked vehicle	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Broken/dirty windscreen	0.0%	0.0%	0.0%	0.0%	1.3%	0.1%
Hit-and-run vehicle	0.0%	1.8%	0.4%	0.0%	1.3%	0.7%
Vision obscured - no details	0.0%	0.0%	0.4%	0.0%	0.0%	0.1%
	0.3%	43.6%	34.9%	11.3%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROAD SURFACE CONDITION BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Dry	0.0%	68.2%	69.9%	65.9%	69.2%	68.5%
Wet	0.0%	24.5%	22.7%	28.4%	26.7%	25.2%
Snow/slush	0.0%	2.2%	0.3%	0.5%	0.7%	1.0%
Ice	0.0%	4.6%	6.8%	4.7%	3.3%	5.0%
Sand/dirt/oil	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Other	0.0%	0.3%	0.3%	0.5%	0.0%	0.2%
	0.0%	30.7%	29.2%	17.5%	22.6%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Dry	0.0%	68.9%	65.1%	68.2%	66.2%	43.7%
Wet	100.0%	22.3%	28.4%	18.2%	29.9%	16.2%
Snow/slush	0.0%	1.5%	1.4%	3.4%	1.3%	1.1%
Ice	0.0%	7.0%	5.0%	10.2%	2.6%	4.1%
Other	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
	0.3%	43.4%	35.4%	11.2%	9.8%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE MANOEUVRE BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Going straight	0.0%	52.3%	55.8%	49.0%	61.2%	54.8%
Slowing/stopping	0.0%	3.0%	2.8%	3.8%	2.6%	3.0%
Starting in traffic lane	0.0%	0.3%	0.9%	1.0%	0.7%	0.7%
Stopped in traffic lane	0.0%	6.5%	10.5%	20.7%	11.4%	11.2%
Passing/overtaking	0.0%	1.6%	0.9%	1.4%	0.4%	1.1%
Entering parking spot	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%
Avoiding animal/pedestrian/object/vehicle	0.0%	3.2%	2.3%	1.4%	0.4%	2.0%
Turning right	0.0%	4.3%	2.6%	3.8%	2.6%	3.3%
Turning left	0.0%	15.4%	11.7%	12.0%	14.3%	13.5%
U-turn	0.0%	0.5%	0.6%	0.5%	0.7%	0.6%
Reversing	0.0%	0.5%	0.9%	1.0%	1.1%	0.8%
Changing lanes/merging	0.0%	0.8%	0.6%	1.0%	0.0%	0.6%
Negotiating curve	0.0%	4.9%	4.6%	1.4%	0.4%	3.2%
Other	0.0%	6.7%	5.7%	2.9%	4.4%	5.2%
	0.0%	30.8%	29.2%	17.3%	22.7%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Going straight	50.0%	54.3%	56.3%	65.5%	56.4%	36.4%
Slowing/stopping	0.0%	1.8%	1.8%	2.3%	1.3%	1.2%
Starting in traffic lane	0.0%	0.3%	0.7%	2.3%	1.3%	0.5%
Stopped in traffic lane	0.0%	3.0%	5.9%	5.7%	6.4%	3.0%
Passing/overtaking	0.0%	0.9%	0.7%	0.0%	0.0%	0.4%
Leaving parking spot	0.0%	0.9%	0.0%	1.1%	0.0%	0.3%
Entering parking spot	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Avoiding animal/pedestrian/object/vehicle	0.0%	4.2%	2.6%	1.1%	1.3%	1.9%
Turning right	0.0%	2.4%	2.9%	2.3%	1.3%	1.6%
Turning left	0.0%	11.6%	9.2%	10.3%	21.8%	7.5%
U-turn	0.0%	0.0%	0.7%	0.0%	0.0%	0.2%
Reversing	0.0%	1.2%	0.7%	2.3%	0.0%	0.7%
Changing lanes/merging	0.0%	0.9%	1.5%	0.0%	0.0%	0.6%
Negotiating curve	50.0%	11.6%	9.6%	3.4%	2.6%	5.9%
Other	0.0%	6.8%	7.4%	3.4%	7.7%	4.3%
	0.3%	43.4%	35.1%	11.2%	10.1%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MANNER OF COLLISION BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No collision with moving vehicle	0.0%	36.9%	28.2%	23.2%	28.4%	30.0%
Rear-end	0.0%	21.7%	22.0%	29.9%	22.7%	23.4%
Head-on	0.0%	4.3%	5.6%	5.2%	6.1%	5.3%
Angle	0.0%	35.8%	42.5%	40.3%	42.1%	40.0%
Sideswipe, same direction	0.0%	0.8%	0.8%	0.9%	0.7%	0.8%
Sideswipe, opposite direction	0.0%	0.5%	0.6%	0.5%	0.0%	0.4%
Other	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%
	0.0%	30.7%	29.1%	17.3%	22.8%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No collision with moving vehicle	50.0%	49.9%	50.9%	48.8%	38.5%	31.5%
Rear-end	0.0%	10.9%	11.6%	7.0%	12.8%	7.0%
Head-on	0.0%	2.6%	6.9%	4.7%	9.0%	3.2%
Angle	50.0%	34.6%	28.5%	37.2%	38.5%	21.3%
Sideswipe, same direction	0.0%	0.6%	0.7%	0.0%	1.3%	0.4%
Sideswipe, opposite direction	0.0%	1.5%	1.4%	2.3%	0.0%	0.9%
	0.3%	43.5%	35.3%	11.0%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
FIRST HARMFUL EVENT (CRASH LEVEL) BY AGE GROUP

N = 2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Non collision					0.00%	
Rollover	0.00%	0.53%	0.56%	0.94%	0.00%	0.5%
Other non collision	0.00%	1.60%	1.12%	0.00%	0.36%	0.9%
Collision with object - not fixed						
Pedestrian	0.00%	6.67%	10.39%	7.98%	8.99%	8.5%
Cycle or cyclist	0.00%	6.67%	5.62%	8.45%	6.12%	6.5%
Motor vehicle on road	0.00%	62.93%	71.91%	76.53%	71.58%	69.9%
Motor vehicle parked	0.00%	1.60%	1.40%	0.47%	3.96%	1.9%
Other	0.00%	0.27%	1.12%	0.00%	0.00%	0.4%
Collision with fixed object						
Guardrail	0.00%	2.13%	1.97%	0.94%	0.36%	1.5%
Post/pole/support	0.00%	7.47%	1.12%	1.88%	3.60%	3.8%
Curb	0.00%	1.60%	0.28%	1.41%	1.08%	1.1%
Embankment	0.00%	1.07%	1.12%	0.00%	0.72%	0.8%
Wall	0.00%	0.53%	0.56%	0.47%	0.72%	0.6%
Tree	0.00%	3.73%	1.40%	0.47%	0.72%	1.8%
Other fixed object	0.00%	3.20%	1.40%	0.47%	1.80%	1.9%
	0.0%	30.7%	29.1%	17.4%	22.7%	100.0%
	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Non collision						
Rollover	0.00%	0.87%	1.79%	1.15%	0.00%	0.7%
Other noncollision	0.00%	0.29%	0.36%	2.30%	0.00%	0.3%
Collision with object not - fixed						
Pedestrian	0.00%	4.96%	6.09%	14.94%	11.54%	4.6%
Cycle or cyclist	0.00%	2.62%	5.38%	12.64%	7.69%	3.4%
Motor vehicle on road	50.00%	50.44%	48.75%	51.72%	61.54%	33.0%
Motor vehicle parked	0.00%	3.21%	3.23%	3.45%	2.56%	2.0%
Other	0.00%	0.29%	1.08%	1.15%	0.00%	0.4%
Collision with fixed object						
Guardrail	50.00%	8.75%	3.58%	2.30%	2.56%	3.7%
Post/pole/support	0.00%	10.50%	11.47%	5.75%	7.69%	6.5%
Curb	0.00%	3.21%	1.79%	0.00%	0.00%	1.3%
Embankment	0.00%	0.58%	1.79%	0.00%	1.28%	0.7%
Wall	0.00%	1.17%	1.08%	0.00%	0.00%	0.6%
Tree	0.00%	7.58%	5.73%	1.15%	1.28%	3.6%
Other fixed object	0.00%	5.54%	7.89%	3.45%	3.85%	3.8%
	0.3%	43.5%	35.4%	11.0%	9.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MOST HARMFUL EVENT (VEHICLE LEVEL) BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Non collision						
Rollover	0.0%	2.9%	1.5%	1.5%	0.4%	1.6%
Other non collision	0.0%	1.1%	0.6%	0.0%	0.4%	0.6%
Collision with object - not fixed						
Pedestrian	0.0%	7.1%	10.9%	7.9%	9.5%	8.9%
Cycle/cyclist	0.0%	7.1%	5.9%	8.9%	6.5%	6.9%
Motor vehicle on road	0.0%	65.4%	73.1%	77.8%	73.8%	71.8%
Parked motor vehicle	0.0%	1.4%	1.5%	0.5%	3.8%	1.8%
Other object not fixed	0.0%	0.3%	0.3%	0.0%	0.0%	0.2%
Collision with fixed object						
Guardrail	0.0%	1.7%	0.9%	0.5%	0.4%	1.0%
Post/pole/support	0.0%	6.6%	1.5%	1.5%	2.3%	3.2%
Tree	0.0%	3.7%	1.8%	0.5%	1.1%	2.0%
Other fixed object	0.0%	2.6%	2.1%	1.0%	1.9%	2.0%
	0.0%	30.3%	29.3%	17.6%	22.8%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Non collision						
Rollover	0.0%	3.7%	4.4%	0.0%	1.4%	2.0%
Other non collision	0.0%	0.3%	0.8%	1.2%	0.0%	0.3%
Collision with object - not fixed						
Pedestrian	0.0%	5.3%	6.9%	14.3%	12.3%	4.7%
Cycle/cyclist	0.0%	3.0%	5.6%	13.1%	8.2%	3.5%
Motor vehicle on road	100.0%	56.1%	51.6%	56.0%	65.8%	34.1%
Parked motor vehicle	0.0%	3.0%	4.0%	3.6%	1.4%	2.0%
Other object not fixed	0.0%	0.3%	1.2%	1.2%	0.0%	0.4%
Collision with fixed object						
Guardrail	0.0%	4.3%	2.8%	1.2%	1.4%	1.9%
Post/pole/support	0.0%	10.0%	10.5%	6.0%	5.5%	5.6%
Tree	0.0%	8.0%	6.5%	1.2%	1.4%	3.6%
Other fixed object	0.0%	6.0%	5.6%	2.4%	2.7%	3.1%
	0.1%	42.6%	35.1%	11.9%	10.3%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE ROLE BY AGE GROUP

N = 2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Single vehicle crashes		0.0%	0.0%	0.0%	0.0%	0.0%
non collision		1.9%	0.9%	1.4%	0.4%	1.2%
striking		31.5%	21.9%	15.6%	24.6%	24.4%
struck		3.0%	5.1%	6.2%	2.2%	4.0%
both		0.0%	0.0%	0.0%	0.0%	0.0%
Multi vehicle crashes		0.0%	0.0%	0.0%	0.0%	0.0%
non collision		0.3%	0.0%	0.0%	0.0%	0.1%
striking		35.3%	35.6%	27.5%	34.4%	33.8%
struck		23.9%	29.6%	42.2%	34.4%	31.2%
both		4.1%	6.8%	7.1%	4.0%	5.4%
	0.0%	30.5%	29.1%	17.5%	22.9%	100.0%

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Single vehicle crashes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
non collision	0.0%	1.2%	1.8%	0.0%	0.0%	0.7%
striking	50.0%	46.0%	46.2%	40.5%	32.1%	28.4%
struck	0.0%	1.5%	2.2%	4.8%	5.1%	1.6%
both	0.0%	0.6%	0.0%	0.0%	0.0%	0.2%
Multi vehicle crashes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
non collision	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
striking	50.0%	27.3%	25.5%	23.8%	30.8%	17.2%
struck	0.0%	20.5%	21.1%	28.6%	29.5%	14.4%
both	0.0%	3.0%	3.3%	2.4%	2.6%	1.9%
	0.3%	43.4%	35.4%	10.8%	10.1%	100.0%

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**APPENDIX 1: GUIDE TO COLLAPSING OF VARIABLES FOR THE GES CASUALTY
FILE (1989): NORTH-WEST REGION**

FIRST HARMFUL EVENT

Non collision

rollover

other non collision: fire/explosion
immersion
gas inhalation
jackknife
non collision injury (injured in vehicle, or fell from vehicle)
non collision - no details
thrown or falling object

Collision with object not fixed

pedestrian

cycle or cyclist

motor vehicle on road

motor vehicle parked

other: railway train
animal
other type of non motorist
object not fixed - no details

Collision with fixed object

guardrail

post/pole/support

curb

embankment

wall

tree

other fixed object: ground
building
impact attenuator/crash cushion
bridge structure
concrete traffic barrier
culvert/ditch
fence
fire hydrant
shrubby or bush
boulder
fixed object - no details

MOST HARMFUL EVENT

Non collision

rollover

other non collision: fire/explosion
immersion
gas inhalation
jackknife
non collision injury (injured in vehicle, or fell from vehicle)
non collision - no details
thrown or falling object

Collision with object not fixed

pedestrian

cycle or cyclist

motor vehicle on road

motor vehicle parked

other: railway train
animal
other type of non motorist
object not fixed - no details

Collision with fixed object

guardrail

post/pole/support

tree

other fixed object: ground
building
impact attenuator/crash cushion
bridge structure
embankment
curb
concrete traffic barrier
culvert/ditch
wall
fence
fire hydrant
shrubby or bush
boulder
fixed object - no details

APPENDIX 2: FREQUENCY TABLES -GES NORTH-WEST REGION (1989)

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GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MAXIMUM INJURY SEVERITY (CRASH LEVEL) BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
Non-incapacitating injury	2	486	401	196	239	1324
Incapacitating injury		157	146	62	68	433
Fatal injury		14	14	9	14	51
Unknown injury severity		54	62	34	32	182
	2	711	623	301	353	1990

Missing cases = 155

-
- Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MAXIMUM INJURY SEVERITY (VEHICLE LEVEL) BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No injury		196	211	139	127	673
Possible injury		41	42	22	29	134
Non-incapacitating injury	2	320	238	91	132	783
Incapacitating injury		99	82	25	35	241
Fatal injury		8	10	5	9	32
Injury severity unknown		42	40	17	19	118
	2	706	623	299	351	1981

Missing cases = 164

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF VEHICLES INVOLVED BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
1	1	302	237	92	106	738
2	1	363	330	170	203	1067
3		48	51	35	39	173
4 or more	0	14	18	9	9	50
	2	727	636	306	357	2028

Missing cases = 117

* Frequencies comprise drivers of cars and car derivatives involved in reported

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER INJURED IN CRASH BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured		16	13	5	4	38
1		415	392	191	214	1212
2	1	177	130	77	89	474
3		75	62	21	31	189
4		24	20	8	11	63
5 or more	1	20	19	4	8	52
	2	727	636	306	357	2028

Missing cases = 117

-
- Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER INJURED IN VEHICLE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured		217	224	146	133	720
1		361	320	132	180	993
2	1	105	66	22	33	227
3		29	16	5	8	58
4 or more	1	15	10	1	3	30
	2	727	636	306	357	2028

Missing cases = 117

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
 NUMBER OF PERSONS INVOLVED (IN CRASH) BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
1		100	86	22	27	235
2	1	196	187	108	125	617
3		154	129	67	70	420
4		80	68	38	52	238
5		43	46	14	21	124
6 or more	1	40	38	15	13	107
	2	613	554	264	308	1741

Missing cases = 404

-
- *Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes*

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DAY OF WEEK BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Monday		95	81	45	49	270
Tuesday	1	96	78	52	39	266
Wednesday		92	68	33	61	254
Thursday		80	92	40	52	264
Friday		111	114	56	62	343
Saturday		132	118	44	53	347
Sunday	1	121	85	35	41	283
	1	606	551	270	316	1744

Missing cases = 118

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
WEEKDAY VERSUS WEEKEND BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Weekday	1	474	433	226	263	1397
Weekend	1	253	203	79	94	630
	2	727	636	305	357	2027

Missing cases = 118

-
- Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TIME PERIOD BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
12 am - 6 am	0	119	104	24	9	256
6 am - 12 pm	0	135	128	84	101	448
12 pm - 6 pm	0	241	228	129	177	775
6 pm - 12 am	2	224	175	67	70	538
	2	719	635	304	357	2017

Missing cases = 128

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TIME PERIOD BY WEEKDAY/WEEKEND BY AGE GROUP

N=2145

	WEEKDAY					Total
	0-15	16-25	26-40	41-55	56-98	
12 am - 6 am		50	51	10	7	118
6 am - 12 pm		94	99	66	88	347
12 pm - 6 pm		171	167	98	123	559
6 pm - 12 am	1	155	115	50	45	366
	1	470	432	224	263	1390

	WEEKEND					Total
	0-15	16-25	26-40	41-55	56-98	
12 am - 6 am		69	52	13	2	136
6 am - 12 pm		41	29	18	13	101
12 pm - 6 pm		70	61	30	54	215
6 pm - 12 am	1	69	61	18	25	174
	1	249	203	79	94	626

Missing cases = 129

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
PERCENTAGE RURAL BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Urban	1	159	174	90	88	512
10% Rural	1	185	194	91	92	563
20% Rural		135	107	51	71	364
30% rural		158	103	50	81	392
70% Rural		90	58	24	25	197
	2	727	636	306	357	2028

Missing cases=117

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
 SPEED LIMIT IN MILES (AND KM/H) BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
0 (car-park, etc)		4				4
10 (17 km/h)						0
15 (24 km/h)			2		1	3
20 (32 km/h)			1		1	2
25 (40 km/h)		86	100	53	44	283
30 (48 km/h)		9	5	5	3	22
35 (56 km/h)	2	100	100	36	66	304
40 (64 km/h)		33	18	14	21	86
45 (72 km/h)		39	40	28	33	140
50 (80 km/h)		18	10	10	12	50
55 (89 km/h)		14	19	4	4	41
	2	303	295	150	185	935

Missing cases = 1210

-
- Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
INTERSTATE HIGHWAY BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No (not on highway)	2	701	622	295	352	1972
Yes (on highway)		25	14	11	5	55
	2	726	636	306	357	2027

Missing cases = 118

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
LAND USE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Population 25,000-50,000		96	94	40	52	282
Population 50,000-100,000		89	82	56	72	299
Population 100,000+	1	89	111	57	42	300
Other area	1	449	348	151	190	1139
	2	723	635	304	356	2020

Missing cases = 125

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROADWAY ALIGNMENT BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Straight	1	568	500	276	324	1669
Curve	1	138	116	24	22	301
	2	706	616	300	346	1970

Missing cases = 175

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROADWAY PROFILE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Level	1	425	384	202	233	1245
Grade	1	152	138	59	63	413
Hillcrest		9	8	4	2	23
Other		5	2			7
	2	591	532	265	298	1688

Missing cases = 457

* Frequencies comprise drivers of cars and car derivatives involved in reported

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFICWAY FLOW BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Two way undivided		349	303	134	193	979
Divided highway		63	58	26	23	170
Oneway		15	7	3	1	26
	0	427	368	163	217	1175

Missing cases = 970

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RELATION TO ROADWAY BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
On roadway	1	493	492	270	301	1557
On shoulder/parking lane		20	17	6	8	51
Off roadway/shoulder/parking lane	1	200	117	25	42	385
On median		12	7	1	2	22
Other			2		2	4
	2	725	635	302	355	2019

Missing cases = 126

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RELATION TO JUNCTION BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Non-junction	1	358	277	114	138	888
Intersection	1	237	215	118	138	709
Intersection related		58	77	46	41	222
Driveway/alley		49	53	22	36	160
Entrance/exit ramp		6	3			9
Other		5	2		2	9
	2	713	627	300	355	1997

Missing cases = 148

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty cras

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF TRAVEL LANES BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
1		13	9	6	6	34
2	1	259	229	100	121	710
3		29	24	11	13	77
4	1	63	79	34	51	228
5		8	12	5	2	27
6		2	2		1	5
	2	374	355	156	194	1081

Missing cases = 1064

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFIC CONTROL DEVICE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No controls	1	474	381	175	204	1235
Traffic signals						
pedestrian signal not known	1	130	158	79	101	469
flashing traffic signal/beacon		4	1	1	1	7
unknown traffic signal		2			2	4
Regulatory, school zone or warning signs						
stop sign		91	82	39	42	254
yield sign			2			2
warning sign		2				2
other sign		1		1		2
Miscellaneous (not at railroad crossing)		2	1	3	2	8
At railroad grade crossing						
active devices				1		1
passive devices		1				1
Traffic controls present - no details		3			1	4
Other traffic controls		4	2	5	1	12
	2	714	627	304	354	2001

Missing cases = 144

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFIC DEVICE FUNCTIONING BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No controls	1	474	381	175	204	1235
Device not functioning		1	3	2		6
Device functioning	1	216	233	120	137	707
	2	691	617	297	341	1948

Missing cases = 197

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
SEX OF DRIVER BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Male	2	487	395	176	199	1259
Female		240	241	130	158	769
	2	727	636	306	357	2028

Missing cases = 117

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ALCOHOL USE (DRIVER) BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved		56	62	7	9	134
No alcohol involved	2	659	561	295	342	1859
	2	715	623	302	351	1993

Missing cases = 152

-
- Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
 ALCOHOL INVOLVEMENT IN CRASH BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved		69	74	16	21	180
No alcohol involved	2	653	553	287	332	1827
	2	722	627	303	353	2007

Missing cases = 138

-
- Frequencies comprise drivers of cars and car derivatives involved in reported crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DRIVER PHYSICAL/MENTAL IMPAIRMENT BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No impairment	2	691	611	298	346	1948
Drowsy/fatigued		13	8	3	1	25
Ill/blackout		1	3	2	2	8
Hit-and-run vehicle		8	1	1	1	11
Physical/mental impairment - no details		2	3		1	6
Other physical/mental impairment		3	1		2	6
	2	718	627	304	353	2004

Missing cases = 141

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DRIVER'S ACTION BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Not avoiding/swerving	2	645	588	293	341	1869
Slippery/loose surface		39	27	4	9	79
Blowout		2	1	1		4
Debris/objects on road		3	1	2		6
Ruts/holes/bumps		1	1			2
Animals on road		6	3	1	2	12
Vehicle on road		9	6	1	1	17
Phantom vehicle		1				1
Pedestrian/cyclist		1			1	2
Water/snow/oil slick		2				2
Hit-and run vehicle		8	1	1	1	11
Avoiding - no details		5	2			7
Other cause		1	2	1		4
	2	723	632	304	355	2016

Missing cases = 129

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VIOLATIONS CHARGED BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
None		482	468	255	283	1488
Alcohol/drugs		38	39	3	6	86
Speeding		46	29	3	3	81
Alcohol or drugs and speeding		7	7			14
Reckless driving	2	10	4	2	2	20
Driving with suspended licence		5	4	2	1	12
Failure to give way		24	14	8	19	65
Running traffic controls/stop sign		14	6	5	10	35
Other violation		94	62	23	31	210
	2	720	633	301	355	2011

Missing cases = 134

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF OCCUPANTS IN VEHICLE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
1		364	362	197	224	1147
2	1	169	125	44	64	403
3		51	45	21	19	136
4		32	23	8	7	70
5 or more	1	12	9	2	2	26
Unknown (only injured reported)		88	66	32	39	225
	2	716	630	304	355	2007

Missing cases = 138

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAVEL SPEED OF VEHICLE IN MILES (AND KM/H) BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
Stationary		34	53	48	36	171
01 - 12 (01 - 20 km/h)		12	6	10	7	35
13 - 24 (21 - 40 km/h)		19	14	7	9	49
25 - 35 (41 - 60 km/h)		20	13	6	8	47
36 - 50 (61 - 80 km/h)		16	14	9	7	46
51 - 60 (81 - 100 km/h)		6	3	1	3	13
Over 60 (>100 km/h)		5	1			6
	0	112	104	81	70	367

Missing cases = 1778

-
- Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MODEL YEAR BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
1986 - 1989		235	260	113	138	746
1981 - 1985	1	268	195	123	122	709
1976 - 1980	1	161	130	48	78	418
1971 - 1975		39	26	11	10	86
1974 and earlier		18	16	4	4	42
	2	721	627	299	352	2001

Missing cases = 144

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE DEFECTS BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No vehicle defects	2	709	617	298	348	1974
Tyres		2	3	1		6
Brakes		3	4		2	9
Steering		2			1	3
Signal lights			1			1
Hit-and-run vehicle		6	2	2	1	11
Defects (no details)		3	1		2	6
Other vehicle defects			2	1	1	4
	2	725	630	302	355	2014

Missing cases = 131

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
LIGHT CONDITIONS BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Daylight		408	367	201	288	1264
Dark		73	50	18	12	153
Dark but lighted	2	208	183	63	43	499
Dawn		6	3	6	2	17
Dusk		19	18	9	4	50
Dawn or dusk		4	2	4	2	12
	2	718	623	301	351	1995

Missing cases = 150

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ATMOSPHERIC CONDITIONS BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No adverse conditions		555	480	229	277	1541
Rain	2	115	118	58	56	349
Sleet		15	10	3	5	33
Snow		28	16	9	12	65
Fog		3	2		1	6
Rain and fog		1	1			2
Other		1	3	1		5
	2	718	630	300	351	2001

Missing values=144

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VISUAL OBSTRUCTION BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
No obstruction	2	703	621	298	347	1971
Precipitation			1		1	2
Glare/sun/headlights		3	3	1	2	9
Curve/hill/embankment			1			1
Building/billboard			1	1		2
Trees/crops/vegetation		1			1	2
Moving vehicle		3		2		5
Parked vehicle		2				2
Broken/dirty windscreen					1	1
Hit-and-run vehicle		8	1	1	1	11
Vision obscured - no details		1	1	1	2	5
Other obstruction		1				1
	2	722	629	304	355	2012

Missing cases = 133

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROAD SURFACE CONDITION BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Dry		496	428	201	240	1365
Wet	2	167	159	76	96	500
Snow-slush		13	5	4	3	25
Ice		41	38	19	11	109
Sand/dirt/oil		1				1
Other		2	1	1		4
	2	720	631	301	350	2004

Missing cases = 141

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE MANOEUVRE BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Going straight	1	382	349	160	211	1103
Slowing/stopping		17	15	10	8	50
Starting in traffic lane		2	5	4	3	14
Stopped in traffic lane		34	53	48	36	171
Passing/overtaking		9	5	3	1	18
Leaving parking spot		3		1		4
Entering parking spot		1	1			2
Avoiding animal/pedestrian/object		27	15	4	2	48
Turning right		24	17	10	8	59
Turning left		96	67	34	56	253
U-turn		2	4	1	2	9
Reversing		7	5	4	3	19
Changing lanes/merging		6	6	2		14
Negotiating curve	1	58	42	6	3	110
Other		48	40	10	18	116
	2	716	624	297	351	1990

Missing cases = 155

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MANNER OF COLLISION BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Not collision with moving vehicle	1	309	241	92	109	752
Rear-end		120	110	69	73	372
Head-on		25	39	15	24	103
Angle	1	257	231	118	147	754
Sideswipe, same direction		5	5	2	3	15
Sideswipe, opposite direction		7	6	3		16
Other			1			1
	2	723	633	299	356	2013

Missing cases=132

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
FIRST HARMFUL EVENT (CRASH LEVEL) BY AGE GROUP

N = 2145

	0-15	16-25	26-40	41-55	56-98	Total
Non collision						
Rollover		5	7	3		15
Other non collision		7	5	2	1	15
Collision with object - not fixed						
Pedestrian		42	54	30	34	160
Cycle or cyclist		34	35	29	23	121
Motor vehicle on road	1	416	393	209	247	1266
Motor vehicle parked		17	14	5	13	49
Other		2	7	1		10
Collision with fixed object						
Guardrail	1	38	17	4	3	63
Post/pole/support		64	36	9	16	125
Curb		17	6	3	3	29
Embankment		7	9		3	19
Wall		6	5	1	2	14
Tree		40	21	2	3	66
Other fixed object		31	27	4	8	70
	2	726	636	302	356	2022

Missing cases = 123

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MOST HARMFUL EVENT (VEHICLE LEVEL) BY AGE GROUP

N=2145

	0-15	16-25	26-40	41-55	56-98	Total
Non-collision						
Rollover		21	16	3	2	42
Other non-collision		5	4	1	1	11
Collision with object - not fixed						
Pedestrian		41	54	28	34	157
Cyclist/cycle		34	34	29	23	120
Motor vehicle on road	1	405	376	206	242	1230
Motor vehicle parked		14	15	5	11	45
Other object not fixed		2	4	1		7
Collision with fixed object						
Guardrail		19	10	2	2	33
Post/pole/support		53	31	8	10	102
Tree		37	22	2	4	65
Other fixed object		27	21	4	7	59
	1	658	587	289	336	1871

Missing cases = 274

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE ROLE BY AGE GROUP

N - 2145

	0-15	16-25	26-40	41-55	56-98	Total
Single vehicle crashes						0
non collision		12	8	3	1	24
striking	1	271	204	68	93	637
struck		16	24	17	10	67
both		2				2
Multi vehicle crashes						0
non collision		1				1
striking	1	227	195	78	119	620
struck		159	163	114	118	554
both		25	33	17	13	88
	2	713	627	297	354	1993

Missing cases = 152

-
- Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

**APPENDIX 3: FREQUENCY TABLES FOR GES NORTHWEST REGION
(1989): DAY/NIGHT COMPARISONS**

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GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MAXIMUM INJURY SEVERITY (CRASH LEVEL) BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Non-incapacitating injury		254	243	142	193	832
Incapacitating injury		78	60	33	51	222
Fatal injury		8	9	8	8	33
Unknown injury severity		29	34	26	23	112
	0	369	346	209	275	1199

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Non-incapacitating injury	2	229	158	52	46	487
Incapacitating injury		79	86	29	17	211
Fatal injury		6	5	1	6	18
Unknown injury severity		22	27	8	9	66
	2	336	276	90	78	782

Missing cases = 164

-
- Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MAXIMUM INJURY SEVERITY (VEHICLE LEVEL) BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No injury		120	137	94	95	446
Possible injury		21	27	18	24	90
Non-incapacitating injury		154	127	62	109	452
Incapacitating injury		43	30	17	26	116
Fatal injury		4	5	4	5	18
Injured - severity unknown		25	20	12	14	71
	0	367	346	207	273	1193

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No injury		73	74	45	32	224
Possible injury		20	15	4	5	44
Non-incapacitating injury	2	164	111	27	23	327
Incapacitating injury		56	52	8	9	125
Fatal injury		4	5	1	4	14
Injured - severity unknown		16	19	5	5	45
	2	333	276	90	78	779

Missing cases = 173

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF VEHICLES INVOLVED BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
1			134	99	49	77	359
2			200	206	130	159	695
3			32	38	27	34	131
4			9	11	6	7	33
5			1	2	1	1	5
		0	376	356	213	278	1223

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
1		1	167	138	42	29	377
2		1	156	123	39	44	363
3			16	13	8	5	42
4				3	2	1	6
6			4	2			6
		2	343	279	91	79	794

Missing cases = 128

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER INJURED IN CRASH BY AGE GROUP

N = 2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No-one injured		7	10	4	3	24
1		215	214	128	161	718
2		100	75	57	78	310
3		38	40	16	21	115
4 or more	0	16	17	8	15	56
	0	376	356	213	278	1223

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No-one injured		7	3	1	1	12
1		194	177	61	53	485
2	1	77	55	20	11	164
3		37	22	5	10	74
4 or more	1	28	22	4	4	59
	2	343	279	91	79	794

Missing cases = 128

-
- * Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER INJURED IN VEHICLE BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
No-one injured			129	147	100	100	476
	1		181	167	93	142	583
	2		49	27	16	28	120
	3 or more	0	17	15	4	8	44
		0	376	356	213	278	1223

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
No-one injured			83	77	46	33	239
	1		177	152	37	38	404
	2	1	56	39	6	5	107
	3 or more	1	27	11	2	3	44
		2	343	279	91	79	794

Missing cases = 128

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF PERSONS INVOLVED IN CRASH BY AGE GROUP

N = 2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
1			41	21	6	19	87
2			102	108	81	96	387
3			98	84	50	56	288
4			42	47	21	40	150
5			25	28	13	19	85
6 or more		0	21	20	11	11	63
		0	329	308	182	241	1060

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
1			58	65	15	8	146
2	1		91	79	26	29	226
3			56	45	17	14	132
4			37	20	17	12	86
5			18	18	1	2	39
6 or more		1	19	18	4	2	44
		2	279	245	80	67	673

Missing cases = 412

-
- Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DAY OF WEEK BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Monday		55	61	35	36	187
Tuesday		53	49	41	35	178
Wednesday		52	41	17	43	153
Thursday		43	49	30	44	166
Friday		62	66	41	53	222
Saturday		57	52	30	39	178
Sunday		54	38	18	28	138
	0	322	318	194	250	1084

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Monday		38	20	10	13	81
Tuesday	1	42	28	11	4	86
Wednesday		40	27	16	18	101
Thursday		37	43	10	8	98
Friday		48	48	13	9	118
Saturday		73	66	14	14	167
Sunday	1	65	47	17	13	143
	1	278	232	74	66	651

Missing cases = 129

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
WEEKDAY VERSUS WEEKEND BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Weekday	0	265	266	164	211	906
Weekend	0	111	90	48	67	316
	0	376	356	212	278	1222

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Weekday	1	205	166	60	52	484
Saturday	1	138	113	31	27	310
	2	343	279	91	79	794

Missing cases = 129

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TIME PERIOD BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
6 am - 12 pm			167	158	103	125	553
12 pm - 6 pm			209	198	110	153	670
		0	376	356	213	278	1223

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
6 pm - 12 am			224	175	67	70	536
12 am - 6 am			119	104	24	9	256
		0	343	279	91	79	792

Missing cases = 130

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTI GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TIME PERIOD BY WEEKDAY/WEEKEND BY AGE GROUP

N=2145

		DAY					Total
		0-15	16-25	26-40	41-55	56-98	
Weekday:	6 am - 12 pm		94	99	66	88	347
	12 pm - 6 pm		171	167	98	123	559
Weekend:	6 am - 12 pm		41	29	18	13	101
	12 pm - 6 pm		70	61	30	54	215
		0	376	356	212	278	1222

		NIGHT					Total
		0-15	16-25	26-40	41-55	56-98	
Weekday:	12 am - 6 am		50	51	10	7	118
	6 pm - 12 am	1	155	115	50	45	366
Weekend:	12 am - 6 am		69	52	13	2	136
	6 pm - 12 am	1	69	61	18	25	174
		2	343	279	91	79	794

Missing cases = 129

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RURAL/URBAN BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Urban		72	103	51	63	289
10% Rural		95	109	67	73	344
20% Rural		72	60	34	54	220
30% Rural		87	53	44	66	250
70% Rural		50	31	17	22	120
	0	376	356	213	278	1223

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Urban	1	85	70	37	25	218
10% Rural	1	87	85	24	19	216
20% Rural		63	47	17	17	144
30% Rural		68	50	6	15	139
70% Rural		40	27	7	3	77
	2	343	279	91	79	794

Missing cases = 128

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
 SPEED LIMIT(IN MILES AND KM/H) BY AGE GROUP

N = 2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
0	(car-park, etc)		4				4
10	(17 km/h)						0
15	(24 km/h)			1		1	2
20	(32 km/h)					1	1
25	(40 km/h)		44	52	33	34	163
30	(48 km/h)		5	4	4	1	14
35	(56 km/h)		52	60	29	52	193
40	(64 km/h)		24	10	10	20	64
45	(72 km/h)		26	27	25	27	105
50	(80 km/h)		11	5	6	9	31
55	(89 km/h)		6	11	2	2	21
		0	172	170	109	147	598

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
15	(24 km/h)			1			1
20	(32 km/h)			1			1
25	(40 km/h)		39	48	19	10	116
30	(48 km/h)		4	1	1	2	8
35	(56 km/h)	2	47	40	7	14	110
40	(64 km/h)		8	8	3	1	20
45	(72 km/h)		13	13	3	6	35
50	(80 km/h)		7	5	4	3	19
55	(89 km/h)		8	8	2	2	20
		2	126	125	39	38	330

Missing cases = 1217

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
INTERSTATE HIGHWAY BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No (not on highway)		360	347	208	275	1190
Yes (on highway)		16	9	5	3	33
	0	376	356	213	278	1223

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No (not on highway)	2	333	274	85	77	771
Yes (on highway)		9	5	6	2	22
	2	342	279	91	79	793

Missing cases = 129

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
LAND USE BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Population 25000-50000		44	48	29	39	160
Population 50000-100000		50	47	36	54	187
Population 100000+		34	60	31	26	151
Other Area		246	200	116	158	720
	0	374	355	212	277	1218

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Population 25000-50000		52	46	11	13	122
Population 50000-100000		38	35	20	18	111
Population 100000+	1	54	51	25	16	147
Other Area	1	197	147	34	32	411
	2	341	279	90	79	791

Missing cases = 136

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROADWAY ALIGNMENT BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
Straight			308	297	193	254	1052
	Curve		60	52	18	13	143
		0	368	349	211	267	1195

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
Straight		1	257	203	81	70	612
	Curve	1	76	64	6	9	156
		2	333	267	87	79	768

Missing cases = 182

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROADWAY PROFILE BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Level		224	220	136	179	759
Grade		88	75	45	52	260
Hillcrest		5	5	4	2	16
Other		2				2
	0	319	300	185	233	1037

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Level	1	195	164	65	54	479
Grade	1	63	62	13	11	150
Hillcrest		4	3			7
Other		2	2			4
	2	264	231	78	65	640

Missing cases = 468

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFICWAY FLOW BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Two way undivided		187	171	102	151	611
Divided highway		34	38	15	19	106
Oneway		3	2	3	1	9
	0	224	211	120	171	726

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Two way undivided		159	132	32	42	365
Divided highway		29	20	10	4	63
Oneway		12	5			17
	0	200	157	42	46	445

Missing cases = 974

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RELATION TO ROADWAY BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
On roadway		286	317	196	238	1037
On shoulder/parking lane		9	7	4	7	27
Off roadway/shoulder/parking lane		76	28	11	30	145
On median		4	1	1	1	7
Other			2		1	3
	0	375	355	212	277	1219

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
On roadway	1	200	174	73	63	511
On shoulder/parking lane		11	10	2	1	24
Off roadway/shoulder/parking lane	1	123	89	13	12	238
On median		8	6		1	15
Other					1	1
	2	342	279	88	78	789

Missing cases = 137

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
RELATION TO JUNCTION BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Non-junction		168	132	71	107	478
Intersection		126	138	88	108	460
Intersection related		35	46	40	35	156
Driveway/alley		36	37	10	24	107
Entrance/exit ramp		2				2
Other		2	1		2	5
	0	369	354	209	276	1208

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Non-junction	1	185	145	42	31	404
Intersection	1	109	77	29	30	246
Intersection related		23	31	6	6	66
Driveway/alley		12	15	12	12	51
Entrance/exit ramp		4	3			7
Other		3	1			4
	2	336	272	89	79	778

Missing cases = 159

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF TRAVEL LANES BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
1		5	3	5	5	18
2		129	120	68	94	411
3		16	17	5	10	48
4		31	53	24	41	149
5		2	5	4		11
6					1	1
	0	183	198	106	151	638

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
1		8	6	1	1	16
2	1	129	109	31	27	297
3		13	7	6	3	29
4	1	32	26	10	10	79
5		6	7	1	2	16
6		2	2			4
	2	190	157	49	43	441

Missing cases = 1066

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFIC CONTROL DEVICE BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No controls		252	203	115	159	729
Traffic signals						
pedestrian signal not known		64	97	58	76	295
flashing traffic controls/beacon		2		1	1	4
unknown traffic signal		2			2	4
Regulatory, school zone or warning signs						
stop sign		47	51	29	34	161
yield sign			1			1
other sign		1		1		2
Miscellaneous (not at railroad crossing)		2	1	3	1	7
At railroad crossing						
active devices				1		1
Traffic controls present - no details		1			1	2
Other traffic control		1	1	3	1	6
	0	372	354	211	275	1212

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No controls	1	219	178	59	45	502
Traffic signals						
pedestrian signal not known	1	65	61	20	25	172
flashing traffic controls/beacon		2	1			3
unknown traffic signal						0
Regulatory, school zone or warning signs						
stop sign		43	31	10	8	92
yield sign			1			1
warning sign		2				2
Miscellaneous (not at railroad crossing)					1	1
At railroad crossing						
passive devices		1				1
Traffic controls present - no details		2				2
Other traffic control		3	1	2		6
	2	337	273	91	79	782

Missing cases = 151

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAFFIC DEVICE FUNCTIONING BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No controls		252	203	115	159	729
Device not functioning		1				1
Device functioning		109	145	92	107	453
	0	362	348	207	266	1183

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No controls	1	219	178	59	45	502
Device not functioning			3	2		5
Device functioning	1	106	88	28	30	253
	2	325	269	89	75	760

Missing cases = 202

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
SEX OF DRIVER BY AGE GROUP

N=2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
Male			231	198	114	152	695
Female			145	158	99	126	528
		0	376	356	213	278	1223

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
Male		2	249	196	61	47	555
Female			94	83	30	32	239
		2	343	279	91	79	794

Missing cases = 128

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ALCOHOL USE (DRIVER) BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Alcohol involved		7	8	1	4	20
No alcohol involved		366	343	211	270	1190
	0	373	351	212	274	1210

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Alcohol involved		48	54	6	5	113
No alcohol involved	2	287	217	82	72	660
	2	335	271	88	77	773

Missing cases = 162

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ALCOHOL INVOLVEMENT IN CRASH BY AGE GROUP

N = 2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Alcohol involved		11	13	4	12	40
No alcohol involved		363	340	208	263	1174
	0	374	353	212	275	1214

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Alcohol involved		57	61	12	9	139
No alcohol involved	2	283	212	77	69	643
	2	340	273	89	78	782

Missing cases = 149

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- * Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DRIVER PHYSICAL/MENTAL IMPAIRMENT BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No impairment		361	350	209	269	1189
Drowsy/fatigued		8	1	2	1	12
Ill/blackout			3	1	2	6
Hit-and-run vehicle		2		1		3
Physical/mental impairment - no details					1	1
Other physical/mental impairment		1			2	3
	0	372	354	213	275	1214

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No impairment	2	322	260	87	77	748
Drowsy/fatigued		5	7	1		13
Ill/blackout		1		1		2
Hit-and-run vehicle		6	1		1	8
Physical/mental impairment - no details		2	3			5
Other physical/mental impairment		2	1			3
	2	338	272	89	78	779

Missing cases = 152

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
DRIVER'S ACTION BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Not avoiding/swerving		344	334	207	267	1152
Slippery or loose surface		19	13	2	8	42
Blowout		1	1	1		3
Ruts/holes/bumps			1			1
Animals on road		1	2		1	4
Vehicle on road		2	3	1	1	7
Pedestrian/cyclist/non-motorist		1				1
Water/snow/oil slick		2				2
Hit-and-run vehicle		2		1		3
Avoiding action - no details		1	1			2
Other cause				1		1
	0	373	355	213	277	1218

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Not avoiding/swerving	2	294	253	84	74	707
Slippery or loose surface		20	14	2	1	37
Blowout		1				1
Debris-object on road		3	1	2		6
Ruts/holes/bumps		1				1
Animals on road		5	1	1	1	8
Vehicle on road		7	3			10
Phantom vehicle		1				1
Pedestrian/cyclist/non-motorist					1	1
Hit-and-run vehicle		6	1		1	8
Avoiding action - no details		3	1			4
Other cause		1	2			3
	2	342	276	89	78	787

Missing cases = 140

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VIOLATIONS CHARGED (DRIVER) BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
None		262	279	182	220	943
Alcohol/drugs		2	7		2	11
Speeding		22	16	2	3	43
Reckless driving		5	1	1	2	9
Driving with suspended licence		2	3	2		7
Failure to give way		16	8	5	12	41
Running traffic controls/stop sign		5	5	4	9	23
Other violation		58	35	14	28	135
	0	372	354	210	276	1212

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
None		212	188	71	63	534
Alcohol/drugs		36	32	3	4	75
Speeding		24	13	1		38
Alcohol or drugs and speeding		7	7			14
Reckless driving	2	5	3	1		11
Driving with suspended licence		3	1		1	5
Failure to give way		8	6	3	7	24
Running traffic controls/stop sign		9	1	1	1	12
Other violation		36	27	9	3	75
	2	340	278	89	79	788

Missing cases = 145

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
NUMBER OF OCCUPANTS IN VEHICLE BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
1		197	205	138	168	708
2		91	65	33	55	244
3		22	24	13	16	75
4 or more	0	23	19	5	8	55
Unknown (only injured reported)		39	38	22	29	128
	0	372	351	211	276	1210

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
1		162	156	57	56	431
2	1	78	60	11	9	159
3		28	21	8	3	60
4 or more	1	21	13	5	1	41
Unknown (only injured reported)		49	28	10	10	97
	2	338	278	91	79	788

Missing cases = 147

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
TRAVEL SPEED OF VEHICLE IN MILES (AND KM/H) BY AGE GROUP

N = 2145

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
Stationary			24	37	43	31	135
01 - 12	(01 - 20 km/h)		7	3	6	6	22
13 - 24	(21 - 40 km/h)		10	5	3	9	27
25 - 35	(41 - 60 km/h)		13	9	5	4	31
36 - 50	(61 - 80 km/h)		10	6	5	6	27
51 - 60	(81 - 100 km/h)		1	3	1	2	7
		0	65	63	63	58	249

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
Stationary			10	16	5	5	36
01 - 12	(01 - 20 km/h)		5	3	4	1	13
13 - 24	(21 - 40 km/h)		9	9	4		22
25 - 35	(41 - 60 km/h)		6	4	1	4	15
36 - 50	(61 - 80 km/h)		6	8	3	1	18
51 - 60	(81 - 100 km/h)		5			1	6
Over 60	(> 100 km/h)		5	1			6
		0	46	41	17	12	116

Missing cases = 1780

- Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MODEL YEAR BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
1986 - 1989		126	156	80	106	468
1981 - 1985		127	107	86	96	416
1976 - 1980		87	67	33	64	251
1971 - 1975		21	15	6	6	48
1974 and earlier		13	7	2	4	26
	0	374	352	207	276	1209

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
1986 - 1989		105	104	33	32	274
1981 - 1985	1	139	88	37	26	291
1976 - 1980	1	73	62	14	14	164
1971 - 1975		17	11	5	4	37
1974 and earlier		5	9	2		16
	2	339	274	91	76	782

Missing cases = 154

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE DEFECTS BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No vehicle defects		369	347	208	271	1195
Tyres		1	3	1		5
Brakes			3		2	5
Steering		1			1	2
Hit-and-run vehicle		2	1	1		4
Vehicle defects - no details		1			2	3
Other vehicle defect					1	1
	0	374	354	210	277	1215

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No vehicle defects	2	332	269	88	77	768
Tyres		1				1
Brakes		3	1			4
Steering		1				1
Signal lights			1			1
Hit-and-run vehicle		4	1	1	1	7
Vehicle defects - no details		2	1			3
Other vehicle defect			2	1		3
	2	343	275	90	78	788

Missing cases = 142

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
LIGHT CONDITIONS BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Daylight		352	331	189	266	1138
Dark		5		3	1	9
Dark but lighted		3	11	8	5	27
Dawn		5	3	5	2	15
Dusk		4	3	3	1	11
Dawn or dusk		2		1	1	4
	0	371	348	209	276	1204

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Daylight		50	36	10	22	118
Dark		68	50	15	11	144
Dark but lighted	2	203	171	55	38	469
Dawn		1		1		2
Dusk		15	15	6	3	39
Dawn or dusk		2	2	3	1	8
	2	339	274	90	75	780

Missing cases = 161

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ATMOSPHERIC CONDITIONS BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No adverse conditions		283	274	157	217	931
Rain		65	60	46	42	213
Sleet		7	4	1	3	15
Snow		12	9	4	11	36
Fog		2	2		1	5
Other		1	3	1		5
	0	370	352	209	274	1205

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No adverse conditions		264	205	70	60	599
Rain	2	50	58	12	14	136
Sleet		8	6	2	2	18
Snow		16	7	5	1	29
Fog		1				1
Rain and fog		1	1			2
	2	340	277	89	77	785

Missing cases = 155

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VISUAL OBSTRUCTION BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No obstruction		361	350	208	271	1190
Precipitation			1		1	2
Glare/sun/headlights		3	2	1	2	8
Building/billboard			1			1
Trees/crops/vegetation		1			1	2
Moving vehicle		2		2		4
Parked vehicle		1				1
Hit-and-run vehicle		2		1		3
Vision obscured - no details		1		1	2	4
Other obstruction		1				1
	0	372	354	213	277	1216

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No obstruction	2	334	270	88	76	770
Glare/sun/headlights			1			1
Curve/hill/embankment			1			1
Building/billboard				1		1
Moving vehicle		1				1
Parked vehicle		1				1
Broken/dirty windscreen					1	1
Hit-and-run vehicle		6	1		1	8
Vision obscured - no details			1			1
	2	342	274	89	78	785

Missing cases = 144

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
ROAD SURFACE CONDITION BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Dry		253	246	139	189	827
Wet		91	80	60	73	304
Snow/slush		8	1	1	2	12
Ice		17	24	10	9	60
Sand/dirt/oil		1				1
Other		1	1	1		3
	0	371	352	211	273	1207

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Dry		235	181	60	51	527
Wet	2	76	79	16	23	196
Snow/slush		5	4	3	1	13
Ice		24	14	9	2	49
Other		1				1
	2	341	278	88	77	786

Missing cases = 152

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
VEHICLE MANOEUVRE BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Going straight		194	196	102	167	659
Slowing/stopping		11	10	8	7	36
Starting in traffic lane		1	3	2	2	8
Stopped in traffic lane		24	37	43	31	135
Passing/overtaking		6	3	3	1	13
Entering parking spot			1			1
Avoiding animal/pedestrian/object/vehicle		12	8	3	1	24
Turning right		16	9	8	7	40
Turning left		57	41	25	39	162
U-turn		2	2	1	2	7
Reversing		2	3	2	3	10
Changing lanes/merging		3	2	2		7
Negotiating curve		18	16	3	1	38
Other		25	20	6	12	63
	0	371	351	208	273	1203

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Going straight	1	183	153	57	44	438
Slowing/stopping		6	5	2	1	14
Starting in traffic lane		1	2	2	1	6
Stopped in traffic lane		10	16	5	5	36
Passing/overtaking		3	2			5
Leaving parking spot		3		1		4
Entering parking spot		1				1
Avoiding animal/pedestrian/object/vehicle		14	7	1	1	23
Turning right		8	8	2	1	19
Turning left		39	25	9	17	90
U-turn			2			2
Reversing		4	2	2		8
Changing lanes/merging		3	4			7
Negotiating curve	1	39	26	3	2	71
Other		23	20	3	6	52
	2	337	272	87	78	776

Missing cases = 166

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MANNER OF COLLISION BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
No collision with moving vehicle		138	100	49	79	366
Rear-end		81	78	63	63	285
Head-on		16	20	11	17	64
Angle		134	151	85	117	487
Sideswipe, same direction		3	3	2	2	10
Sideswipe, opposite direction		2	2	1		5
Other			1			1
	0	374	355	211	278	1218

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
No collision with moving vehicle	1	170	141	42	30	384
Rear-end		37	32	6	10	85
Head-on		9	19	4	7	39
Angle	1	118	79	32	30	260
Sideswipe, same direction		2	2		1	5
Sideswipe, opposite direction		5	4	2		11
	2	341	277	86	78	784

Missing cases = 143

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
FIRST HARMFUL EVENT (CRASH LEVEL) BY AGE GROUP

N = 2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Non collision						
Rollover		2	2	2		6
Other non collision		6	4		1	11
Collision with object - not fixed						
Pedestrian		25	37	17	25	104
Cycle or cyclist		25	20	18	17	80
Motor vehicle on road		236	256	163	199	854
Motor vehicle parked		6	5	1	11	23
Other		1	4			5
Collision with fixed object						
Guardrail		8	7	2	1	18
Post/pole/support		28	4	4	10	46
Curb		6	1	3	3	13
Embankment		4	4		2	10
Wall		2	2	1	2	7
Tree		14	5	1	2	22
Other fixed object		12	5	1	5	23
	0	375	356	213	278	1222

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Non collision						
Rollover		3	5	1		9
Other noncollision		1	1	2		4
Collision with object not - fixed						
Pedestrian		17	17	13	9	56
Cycle or cyclist		9	15	11	6	41
Motor vehicle on road	1	173	136	45	48	403
Motor vehicle parked		11	9	3	2	25
Other		1	3	1		5
Collision with fixed object						
Guardrail	1	30	10	2	2	45
Post/pole/support		36	32	5	6	79
Curb		11	5			16
Embankment		2	5		1	8
Wall		4	3			7
Tree		26	16	1	1	44
Other fixed object		19	22	3	3	47
	2	343	279	87	78	789

Missing cases = 134

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
MOST HARMFUL EVENT (VEHICLE LEVEL) BY AGE GROUP

N=2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Non collision						
Rollover		10	5	3	1	19
Other non collision		4	2		1	7
Collision with object - not fixed						
Pedestrian		25	37	16	25	103
Cycle/cyclist		25	20	18	17	80
Motor vehicle on road		229	247	158	194	828
Parked motor vehicle		5	5	1	10	21
Other object not fixed		1	1			2
Collision with fixed object						
Guardrail		6	3	1	1	11
Post/pole/support		23	5	3	6	37
Tree		13	6	1	3	23
Other fixed object		9	7	2	5	23
	0	350	338	203	263	1154

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Non collision						
Rollover		11	11		1	23
Other non collision		1	2	1		4
Collision with object - not fixed						
Pedestrian		16	17	12	9	54
Cycle/cyclist		9	14	11	6	40
Motor vehicle on road	1	169	128	47	48	393
Parked motor vehicle		9	10	3	1	23
Other object not fixed		1	3	1		5
Collision with fixed object						
Guardrail		13	7	1	1	22
Post/pole/support		30	26	5	4	65
Tree		24	16	1	1	42
Other fixed object		18	14	2	2	36
	1	301	248	84	73	707

Missing cases = 284

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes

GENERAL ESTIMATES SYSTEM (1989) - NORTHWEST REGION*
 VEHICLE ROLE BY AGE GROUP

N = 2145

	DAY					Total
	0-15	16-25	26-40	41-55	56-98	
Single vehicle crashes						0
non collision		7	3	3	1	14
striking		116	77	33	68	294
struck		11	18	13	6	48
both						0
Multi vehicle crashes						0
non collision		1				1
striking		130	125	58	95	408
struck		88	104	89	95	376
both		15	24	15	11	65
	0	368	351	211	276	1206

	NIGHT					Total
	0-15	16-25	26-40	41-55	56-98	
Single vehicle crashes						0
non collision		4	5			9
striking	1	155	127	34	25	342
struck		5	6	4	4	19
both		2				2
Multi vehicle crashes						0
non collision						0
striking	1	92	70	20	24	207
struck		69	58	24	23	174
both		10	9	2	2	23
	2	337	275	84	78	776

Missing cases = 163

* Frequencies comprise drivers of cars and car derivatives involved in reported casualty crashes