FEDERAL GOVERNMENT'S ROAD SAFETY INITIATIVE

YOUNG DRIVER RESEARCH PROGRAM -

MASS CRASH DATA ANALYSIS

GENERAL ESTIMATES SYSTEM (1989) - SOUTH REGION

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Abstract

This report is tenth 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 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°	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°	Data File	US Region	Year(s)
7	GES	North-west	1989
8	"	Mid-west	"
9	"	West	"
10	"	South	"

Overview report

Report N°	
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° 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 (Nº 10 in the series) presents results for casualty crashes which occurred in the Southern 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) - SOUTHERN 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 Police 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 1.

- 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) - SOUTHERN REGION*
MAXIMUM INJURY SEVERITY (CRASH LEVEL) BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
Nonincapacitating injury	47.6%	55.6%	57.2%	56.4%	55.5%	56.2%
Incapacitating injury	47.6%	41.5%	41.0%	40.5%	41.0%	41.1%
Fatal injury	4.8%	2.7%	1.3%	2.7%	2.9%	2.3%
Unknown injury severity	0.0%	0.2%	0.4%	0.3%	0.6%	0.3%
Died prior	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	0.3%	36.9%	33.6%	15.2%	14.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MAXIMUM INJURY SEVERITY (VEHICLE LEVEL) BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No injury	14.3%	28.7%	32.2%	36.3%	36.2%	32.0%
Possible injury	0.0%	5.6%	7.3%	7.8%	7.8%	6.8%
Nonincapacitating injury	38.1%	38.1%	35.3%	31.0%	30.2%	35.0%
Incapacitating injury	42.9%	25.9%	24.2%	23.1%	23.5%	24.6%
Fatal injury	4.8%	1.6%	0.8%	1.8%	2.1%	1.4%
Injured - severity unknown	0.0%	0.1%	0.2%	0.0%	0.2%	0.1%
	0.3%	36.9%	33.6%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF VEHICLES INVOLVED BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
1	57.1%	31.0%	24.0%	21.3%	17.7%	25.4%
2	42.9%	57.8%	61.0%	63.4%	67.7%	61.0%
3	0.0%	9.0%	11.2%	12.1%	11.0%	10.5%
4	0.0%	1.6%	2.9%	2.7%	2.7%	2.4%
5	0.0%	0.4%	0.6%	0.3%	0.2%	0.4%
6	0.0%	0.1%	0.2%	0.0%	0.6%	0.2%
7	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%
	0.3%	36.8%	33.8%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER INJURED IN CRASH BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured	0.0%	0.8%	1.3%	0.6%	0.5%	0.9%
1	61.9%	53.4%	54.0%	57.2%	51.8%	54.0%
2	19.0%	28.3%	27.1%	24.7%	30.3%	27.6%
3	9.5%	10.4%	10.4%	10.6%	11.7%	10.6%
4	9.5%	4.4%	4.4%	5.1%	3.5%	4.4%
5	0.0%	1.5%	1.4%	1.2%	1.6%	1.4%
6 or more	0.0%	1.3%	1.5%	0.6%	0.6%	1.1%
	0.3%	36.8%	33.8%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER INJURED IN VEHICLE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured	14.3%	29.3%	33.3%	36.8%	36.6%	32.8%
1	52.4%	50.3%	50.7%	48.2%	49.3%	50.0%
2	19.0%	15.0%	11.4%	11.7%	11.9%	12.8%
3	4.8%	3.5%	3.5%	2.4%	1.4%	3.0%
4 or more	9.5%	1.9%	1.1%	0.8%	0.8%	1.4%
	0.3%	36.8%	33.8%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF PERSONS INVOLVED BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
1	10.0%	12.2%	10.7%	8.6%	5.2%	10.2%
2	35.0%	32.8%	32.3%	37.9%	37.1%	34.0%
3	25.0%	22.4%	22.0%	22.3%	27.5%	23.0%
4	10.0%	14.7%	14.6%	15.0%	15.8%	14.8%
5	10.0%	9.4%	9.5%	7.0%	7.0%	8.7%
6	5.0%	3.5%	5.3%	4.6%	3.3%	4.2%
7	0.0%	2.4%	3.0%	1.9%	1.3%	2.4%
8 or more	5.0%	2.6%	2.7%	2.9%	2.9%	2.7%
	0.3%	36.9%	33.5%	15.3%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DAY OF WEEK BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Sunday	9.5%	14.0%	11.3%	9.9%	10.5%	11.9%
Monday	9.5%	12.0%	12.7%	14.3%	15.8%	13.1%
Tuesday	14.3%	11.5%	13.3%	13.8%	14.0%	12.8%
Wednesday	4.8%	13.0%	13.2%	13.4%	13.4%	13.2%
Thursday	14.3%	13.9%	14.9%	15.3%	15.0%	14.6%
Friday	19.0%	18.9%	17.5%	17.1%	17.6%	18.0%
Saturday	28.6%	16.7%	17.1%	16.2%	13.7%	16.4%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
WEEKDAY VS WEEKEND BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Weekday	61.9%	69.4%	71.7%	73.8%	75.7%	71.7%
Weekend	38.1%	30.6%	28.3%	26.2%	24.3%	28.3%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

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

N=6539

	0-15	16-25	26-40	41-55	56-98	Total
12 am - 6 am	23.8%	11.7%	8.0%	6.2%	2.2%	8.3%
6 am - 12 pm	0.0%	17.6%	22.4%	23.4%	27.6%	21.5%
12 pm - 6 pm	47.6%	41.2%	42.8%	44.0%	52.5%	43.8%
6 pm - 12 am	28.6%	29.5%	26.7%	26.5%	17.7%	26.5%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

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

N=6539

WEEKDAY

	0-15	16-25	26-40	41-55	56-98	Total
12am - 6am	15.4%	6.6%	4.8%	4.0%	1.7%	4.9%
6 am - 12 pm	0.0%	19.7%	24.6%	26.2%	27.3%	23.5%
12 pm - 6 pm	53.8%	45.2%	44.6%	45.0%	54.4%	46.3%
6 pm - 12 am	30.8%	28.5%	25.9%	24.8%	16.6%	25.3%
	0.3%	35.6%	33.7%	15.7%	14.7%	100.0%

WEEKEND

	0-15	16-25	26-40	41-55	56-98	Total
12am - 6am	37.5%	23.2%	16.0%	12.0%	3.8%	16.9%
6 am - 12 pm	0.0%	12.7%	17.0%	15.3%	28.3%	16.3%
12 pm - 6 pm	37.5%	32.2%	38.3%	41.0%	46.7%	37.3%
6 pm - 12 am	25.0%	31.8%	28.7%	31.7%	21.2%	29.4%
	0.5%	39.8%	33.8%	14.0%	11.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
RURAL/URBAN BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Urban	23.8%	28.2%	35.6%	33.6%	28.7%	31.6%
10% Rural	4.8%	12.7%	14.1%	18.0%	24.1%	15.5%
20% Rural	9.5%	5.6%	4.5%	4.5%	3.9%	4.8%
30% Rural	23.8%	25.3%	21.5%	20.1%	18.2%	22.2%
40% Rural	0.0%	3.8%	3.0%	2.9%	3.0%	3.3%
50% Rural	9.5%	3.7%	4.2%	3.8%	4.9%	4.1%
70% Rural	23.8%	16.5%	12.2%	13.2%	14.3%	14.3%
90% Rural	4.8%	4.3%	4.9%	4.0%	2.9%	4.2%
	0.3%	36.8%	33.8%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
SPEED LIMIT IN MILES (AND KM/H) BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
0 (car-park, etc)	0.0%	0.2%	0.1%	0.1%	0.2%	0.1%
5 (8 km/h)	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%
10 (17 km/h)	0.0%	0.1%	0.1%	0.2%	0.0%	0.1%
15 (24 km/h)	5.3%	0.8%	0.4%	0.5%	0.6%	0.6%
20 (32 km/h)	5.3%	0.5%	0.3%	0.7%	0.6%	0.5%
25 (40 km/h)	10.5%	7.2%	6.0%	5.5%	5.6%	6.3%
30 (48 km/h)	10.5%	14.7%	15.2%	16.4%	15.4%	15.2%
35 (56 km/h)	5.3%	21.0%	21.9%	20.3%	21.3%	21.2%
40 (64 km/h)	15.8%	11.2%	11.7%	11.9%	12.7%	11.7%
45 (72 km/h)	26.3%	17.0%	17.2%	19.4%	20.4%	17.9%
50 (80 km/h)	0.0%	3.3%	3.8%	3.3%	3.3%	3.5%
55 (89 km/h)	21.1%	22.9%	21.8%	20.2%	19.1%	21.6%
60 (97 km/h)	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
65 (105 km/h)	0.0%	1.0%	1.2%	1.5%	0.6%	1.1%
	0.3%	36.8%	33.6%	15.4%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
INTERSTATE HIGHWAY BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No (not on hwy)	100.0%	97.5%	96.9%	96.4%	98.5%	97.3%
Yes (on hwy)	0.0%	2.5%	3.1%	3.6%	1.5%	2.7%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

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

N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Population 25000 - 50000	0.0%	3.4%	4.6%	5.5%	6.4%	4.5%
Population 50000 - 100000	15.0%	13.2%	11.9%	9.5%	11.8%	12.0%
Population 100000+	30.0%	29.3%	35.0%	32.4%	27.0%	31.4%
Other Area	55.0%	54.1%	48.6%	52.6%	54.8%	52.1%
	0.3%	36.6%	33.7%	15.4%	14.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROADWAY ALIGNMENT BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Straight	85.7%	85.8%	88.7%	88.7%	92.3%	88.1%
Curve	14.3%	14.2%	11.3%	11.3%	7.7%	11.9%
	0.3%	36.9%	33.7%	15.2%	13.8%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROADWAY PROFILE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Level	70.6%	69.4%	72.3%	73.6%	79.8%	72.5%
Grade	29.4%	26.5%	24.4%	23.5%	18.6%	24.2%
Hillcrest	0.0%	3.6%	2.8%	2.3%	1.5%	2.8%
Other	0.0%	0.6%	0.5%	0.6%	0.1%	0.5%
	0.3%	37.1%	32.8%	15.5%	14.3%	100.0%

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

N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Two way undivided	95.2%	66.9%	61.7%	60.4%	58.3%	63.1%
Divided highway	4.8%	30.4%	34.8%	35.8%	39.6%	33.9%
Oneway	0.0%	2.7%	3.5%	3.8%	2.0%	3.0%
	0.4%	36.8%	33.3%	15.2%	14.3%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
RELATION TO ROADWAY BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
On roadway	47.6%	76.6%	84.5%	87.9%	92.7%	83.1%
On shoulder/parking lane	0.0%	1.5%	1.6%	1.6%	0.9%	1.5%
Off roadway/shoulder/parking lane	52.4%	21.4%	13.4%	10.1%	6.4%	15.0%
On median	0.0%	0.5%	0.5%	0.4%	0.0%	0.4%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

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

N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Non junction	52.4%	43.6%	41.8%	37.2%	26.7%	39.7%
Intersection	38.1%	39.5%	39.4%	41.9%	51.7%	41.5%
Intersection related	9.5%	7.0%	8.4%	9.6%	10.9%	8.4%
Interchange area	0.0%	0.1%	0.3%	0.3%	0.1%	0.2%
Driveway/alley	0.0%	8.8%	8.2%	9.1%	9.6%	8.7%
Entrance/exit ramp	0.0%	0.5%	1.1%	0.7%	0.5%	0.7%
Railway crossing	0.0%	0.2%	0.3%	0.4%	0.2%	0.3%
Other	0.0%	0.3%	0.5%	0.7%	0.2%	0.4%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF TRAVEL LANES BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
1	0.0%	0.9%	1.2%	1.1%	1.5%	1.1%
2	73.7%	61.6%	53.8%	53.5%	52.5%	56.5%
3	5.3%	13.2%	15.9%	17.1%	17.7%	15.3%
4	15.8%	15.6%	19.2%	18.8%	19.3%	17.8%
5	5.3%	5.5%	5.0%	5.6%	5.1%	5.3%
6	0.0%	1.9%	3.1%	2.6%	2.3%	2.4%
Seven or more	0.0%	1.3%	1.9%	1.4%	1.7%	1.6%
	0.3%	36.8%	33.6%	15.2%	14.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFIC CONTROL DEVICE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No controls	66.7%	59.1%	57.0%	53.6%	47.8%	56.0%
Traffic signals						
with pedestrian signal	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%
pedestrian signal not known	9.5%	19.6%	22.6%	24.1%	26.5%	22.2%
flashing traffic signal/beacon	0.0%	1.0%	1.2%	1.7%	1.0%	1.2%
other traffic signal	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%
unknown traffic signal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Regulatory, school zone or warning signs						
stop sign	14.3%	13.2%	11.9%	12.7%	16.5%	13.2%
yield sign	0.0%	0.8%	0.8%	0.8%	0.7%	0.8%
warning sign	0.0%	0.5%	0.3%	0.6%	0.2%	0.4%
other sign	0.0%	0.3%	0.2%	0.4%	0.0%	0.2%
manned crossing	0.0%	0.4%	0.3%	0.5%	0.2%	0.4%
Miscellaneous, not at railroad crossing	0.0%	0.1%	0.2%	0.4%	0.2%	0.2%
Traffic controls present - no details	4.8%	1.7%	2.1%	1.4%	1.6%	1.8%
Other traffic controls	4.8%	3.0%	3.2%	3.6%	5.2%	3.5%
	0.3%	36.8%	33.6%	15.3%	14.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFIC DEVICE FUNCTIONING BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No controls	70.0%	60.6%	58.9%	55.1%	49.6%	57.7%
Device not functioning	0.0%	0.2%	0.3%	0.4%	0.2%	0.3%
Device functioning	30.0%	39.2%	40.8%	44.4%	50.2%	42.0%
	0.3%	36.9%	33.5%	15.3%	13.9%	100.0%

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

N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Male	61.9%	56.3%	53.6%	51.9%	56.1%	54.7%
Female	38.1%	43.7%	46.4%	48.1%	43.9%	45.3%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ALCOHOL USE (DRIVER) BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	10.0%	8.2%	8.6%	6.1%	2.2%	7.2%
No alcohol involved	90.0%	91.8%	91.4%	93.9%	97.8%	92.8%
	0.3%	36.6%	33.8%	15.3%	14.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ALCOHOL INVOLVEMENT IN CRASH BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	14.3%	11.6%	12.0%	9.5%	5.2%	10.5%
No alcohol involved	85.7%	88.4%	88.0%	90.5%	94.8%	89.5%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DRIVER PHYSICAL/MENTAL IMPAIRMENT BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No impairment	90.0%	95.3%	95.1%	95.6%	97.6%	95.6%
Drowsy/fatigued	0.0%	1.7%	1.4%	0.7%	0.1%	1.2%
Ill/blackout	0.0%	0.2%	0.1%	0.9%	0.2%	0.3%
Emotional	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Drugs/medication	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Illicit drugs	0.0%	0.5%	0.4%	0.2%	0.1%	0.4%
Wheelchair	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Deaf	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%
Hit-and-run vehicle	5.0%	1.0%	0.7%	0.3%	0.1%	0.7%
Physical/mental impairment - no details	0.0%	0.3%	0.4%	0.8%	0.7%	0.5%
Other physical/mental impairment	5.0%	0.9%	1.8%	1.3%	1.0%	1.3%
	0.3%	36.9%	33.7%	15.3%	13.8%	100.0%

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

N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Not avoiding/swerving	95.2%	95.0%	96.2%	96.2%	98.4%	96.1%
Wind from passing truck	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Slippery or loose surface	0.0%	1.1%	1.0%	0.7%	0.5%	0.9%
Blowout	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Debris/object on road	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Ruts/holes/bumps	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%
Animals on road	0.0%	0.3%	0.2%	0.1%	0.0%	0.2%
Vehicle on road	0.0%	1.1%	0.6%	0.9%	0.1%	0.8%
Phantom vehicle	0.0%	0.3%	0.1%	0.3%	0.0%	0.2%
Pedestrian/cyclist/non motorist	0.0%	0.1%	0.2%	0.3%	0.2%	0.2%
Water/snow/oil slick	0.0%	0.2%	0.2%	0.2%	0.0%	0.2%
Hit-and-run vehicle	4.8%	1.0%	0.7%	0.3%	0.1%	0.7%
Avoiding action - no details	0.0%	0.6%	0.7%	0.5%	0.3%	0.6%
Other cause	0.0%	0.2%	0.0%	0.2%	0.2%	0.1%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

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

N=6539

	0-15	16-25	26-40	41-55	56-98	Total
None	61.9%	65.6%	70.0%	73.5%	67.3%	68.5%
Alcohol/drugs	0.0%	3.8%	4.5%	3.8%	0.8%	3.6%
Speeding	4.8%	3.8%	2.6%	2.4%	2.3%	3.0%
Alcohol or drugs and speeding	0.0%	0.4%	0.4%	0.1%	0.1%	0.3%
Reckless driving	4.8%	2.2%	1.0%	0.9%	0.7%	1.4%
Driving with suspended licence	4.8%	1.3%	1.1%	0.2%	0.0%	0.9%
Failure to giveway	4.8%	7.1%	6.1%	7.3%	15.5%	7.9%
Running traffic signal/stop sign	0.0%	2.1%	1.7%	1.4%	2.3%	1.9%
Other violation	19.0%	13.8%	12.6%	10.4%	11.0%	12.5%
	0.3%	36.8%	33.8%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER ON OCCUPANTS IN VEHICLE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
1	30.0%	51.4%	58.5%	62.4%	62.0%	56.9%
2	35.0%	26.5%	19.4%	20.4%	23.7%	22.8%
3	15.0%	9.0%	9.1%	6.9%	5.2%	8.2%
4	20.0%	4.5%	4.0%	2.9%	2.0%	3.8%
5	0.0%	1.4%	1.5%	1.3%	0.7%	1.3%
6	0.0%	0.5%	0.4%	0.1%	0.2%	0.4%
7	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%
only injured reported	0.0%	6.6%	7.0%	6.0%	6.3%	6.6%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAVEL SPEED OF VEHICLE IN MILES (AND KM/H) BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
Stationary	10.0%	12.5%	19.3%	21.5%	16.6%	16.8%
01 - 12 (01 - 20 km/h)	0.0%	13.6%	13.1%	14.6%	24.0%	15.2%
13 - 24 (21 - 40 km/h)	20.0%	18.2%	18.7%	17.3%	23.5%	19.0%
25 - 35 (41 - 60 km/h)	20.0%	18.3%	19.8%	23.5%	19.4%	19.8%
36 - 50 (61 - 80 km/h)	20.0%	22.9%	19.9%	16.0%	12.7%	19.2%
51 - 60 (81 - 100 km/h)	0.0%	9.2%	6.0%	5.3%	2.9%	6.6%
Over 60 (>100 km/h)	30.0%	5.3%	3.2%	1.8%	0.9%	3.4%
	0.3%	36.0%	31.8%	16.4%	15.5%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MODEL YEAR BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
1986 - 1989	31.6%	31.6%	34.7%	37.2%	29.3%	33.2%
1981 - 1985	36.8%	33.1%	34.0%	31.6%	38.0%	33.9%
1976 - 1980	21.1%	25.7%	23.2%	22.6%	23.4%	24.0%
1971 - 1975	10.5%	7.0%	5.9%	6.4%	7.0%	6.5%
1974 and earlier	0.0%	2.6%	2.3%	2.1%	2.2%	2.4%
	0.3%	36.9%	33.7%	15.2%	13.9%	100.0%

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

N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No vehicle defects	95.2%	97.8%	98.0%	98.7%	99.5%	98.3%
Tyres	0.0%	0.7%	0.4%	0.3%	0.1%	0.4%
Brakes	0.0%	0.4%	0.5%	0.5%	0.1%	0.4%
Steering	0.0%	0.2%	0.1%	0.0%	0.1%	0.1%
Headlights	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other lights	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%
Wheels	0.0%	0.0%	0.1%	0 0%	0.0%	0.0%
Trailer hitch	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hit-and-run vehicle	4.8%	0.6%	0.4%	0.2%	0.0%	0.4%
Vehicle defects - no details	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%
Other vehicle defect	0.0%	0.1%	0.2%	0.0%	0.1%	0.1%
	0.3%	36.7%	33.7%	15.3%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
LIGHT CONDITIONS BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Daylight	52.4%	61.8%	66.4%	70.2%	82.8%	67.5%
Dark	19.0%	18.1%	14.4%	11.5%	7.2%	14.3%
Dark but lighted	19.0%	16.5%	15.2%	14.2%	7.2%	14.4%
Dawn	0.0%	0.8%	0.7%	0.6%	0.3%	0.7%
Dusk	9.5%	2.8%	3.3%	3.4%	2.5%	3.0%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ATMOSPHERIC CONDITIONS BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No adverse conditions	90.5%	82.8%	82.6%	85.5%	87.4%	83.8%
Rain	9.5%	15.3%	15.1%	12.8%	11.3%	14.3%
Sleet	0.0%	0.3%	0.8%	1.0%	0.5%	0.6%
Snow	0.0%	0.4%	0.9%	0.5%	0.2%	0.6%
Fog	0.0%	0.9%	0.1%	0.1%	0.3%	0.4%
Other	0.0%	0.3%	0.5%	0.1%	0.2%	0.3%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VISUAL OBSTRUCTION BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No obstruction	95.2%	94.7%	97.0%	95.7%	96.3%	95.9%
Precipitation	0.0%	1.0%	0.3%	0.9%	0.8%	0.7%
Glare/sun/headlights	0.0%	0.5%	0.1%	0.1%	0.6%	0.3%
Curve/hill/embankment	0.0%	0.6%	0.0%	0.2%	0.3%	0.3%
Building/billboard	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%
Trees/crops/vegetation	0.0%	0.4%	0.3%	0.3%	0.1%	0.3%
Moving vehicle	0.0%	0.4%	0.5%	0.8%	0.3%	0.5%
Parked vehicle	0.0%	1.0%	0.7%	1.3%	0.5%	0.8%
Splash/spray from passing vehicle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Inadequate demister	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Broken/dirty windscreen	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%
Hit-and-run vehicle	4.8%	0.9%	0.7%	0.3%	0.1%	0.6%
Vision obscured - no details	0.0%	0.3%	0.0%	0.1%	0.5%	0.2%
Other obstruction	0.0%	0.3%	0.1%	0.0%	0.2%	0.2%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROAD SURFACE CONDITION BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Dry	90.0%	76.6%	76.9%	79.7%	81.5%	77.9%
Wet	10.0%	22.1%	20.9%	18.5%	17.2%	20.4%
Snow/slush	0.0%	0.2%	0.5%	0.1%	0.1%	0.3%
Ice	0.0%	0.7%	1.6%	1.6%	0.8%	1.2%
Other	0.0%	0.3%	0.1%	0.1%	0.5%	0.3%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VEHICLE MANOEUVRE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Going straight	52.4%	60.2%	60.0%	60.0%	53.7%	59.2%
Slowing/stopping	4.8%	2.7%	3.3%	3.4%	2.9%	3.0%
Starting in traffic	0.0%	1.1%	0.9%	1.3%	2.6%	1.2%
Stopped in traffic	4.8%	7.4%	10.9%	13.9%	11.2%	10.1%
Passing/overtaking	4.8%	1.0%	0.8%	0.4%	0.3%	0.8%
Leaving parking spot	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%
Parked	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Entering parking spot	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%
Avoiding animal/ped/object/vehicle	0.0%	2.8%	1.9%	2.0%	0.3%	2.0%
Turning right	0.0%	2.1%	2.9%	2.3%	4.5%	2.7%
Turning left	19.0%	11.7%	9.9%	10.9%	19.7%	12.1%
U-turn	0.0%	0.4%	0.3%	0.3%	1.0%	0.4%
Reversing	0.0%	0.6%	0.6%	0.3%	0.2%	0.5%
Changing lanes/merging	0.0%	1.3%	1.8%	1.0%	1.2%	1.4%
Negotiating curve	4.8%	5.0%	3.3%	1.2%	0.7%	3.2%
Other	9.5%	3.5%	3.5%	2.7%	1.6%	3.1%
	0.3%	36.8%	33.7%	15.3%	13.9%	100.0%

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

N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No collision with moving vehicle	57.1%	31.5%	25.2%	22.2%	18.3%	26.2%
Rear-end	9.5%	20.2%	24.6%	25.2%	23.3%	22.8%
Head-on	0.0%	5.4%	5.2%	4.5%	3.8%	4.9%
Angle	33.3%	41.1%	43.2%	46.3%	53.6%	44.3%
Sideswipe, same direction	0.0%	0.9%	0.8%	0.9%	0.6%	0.8%
Sideswipe, opposite direction	0.0%	1.0%	1.0%	0.8%	0.5%	0.9%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
FIRST HARMFUL EVENT (CRASH LEVEL) BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
Non collision						
Rollover	9.5%	1.9%	1.4%	0.8%	0.6%	1.4%
Other non collision	0.0%	1.3%	1.0%	1.0%	0.1%	1.0%
Collision with object - not fixed						
Pedestrian	0.0%	4.5%	5.8%	5.1%	6.2%	5.3%
Cycle or cyclist	4.8%	2.9%	3.1%	4.6%	5.4%	3.6%
Motor vehicle on road	42.9%	68.6%	74.9%	77.8%	81.8%	73.9%
Motor vehicle parked	0.0%	1.2%	1.5%	1.0%	0.8%	1.2%
Other object not fixed	9.5%	0.3%	0.6%	0.9%	0.1%	0.5%
Collision with fixed object						
Guardrail	0.0%	1.0%	0.5%	0.5%	0.3%	0.6%
Post/pole/support	4.8%	4.2%	2.8%	1.9%	0.9%	2.9%
Culvert/ditch	9.5%	3.7%	2.3%	1.6%	1.6%	2.6%
Curb	4.8%	1.0%	0.7%	0.5%	0.1%	0.7%
Embankment	0.0%	2.2%	1.0%	0.6%	0.5%	1.3%
Fence	0.0%	0.9%	0.5%	0.6%	0.1%	0.6%
Tree	14.3%	3.9%	2.5%	1.7%	0.5%	2.7%
Other fixed object	0.0%	2.6%	1.6%	1.2%	1.0%	1.8%
	0.3%	36.8%	33.8%	15.2%	13.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MOST HARMFUL EVENT (VEHICLE LEVEL) BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Non collision						
Rollover	16.7%	3.8%	2.5%	1.5%	1.3%	2.7%
Other non collision	0.0%	1.3%	0.6%	0.3%	0.2%	0.7%
Collision with object - not fixed						
Pedestrian	0.0%	4.7%	5.9%	5.3%	6.4%	5.4%
Cycle/cyclist	5.6%	3.1%	3.1%	4.7%	5.2%	3.7%
Motor vehicle on road	50.0%	70.9%	76.8%	79.3%	82.5%	75.8%
Parked motor vehicle	0.0%	1.2%	1.4%	1.0%	0.9%	1.2%
Other object not fixed	11.1%	0.2%	0.5%	1.1%	0.1%	0.4%
Collision with fixed object						
Guardrail	0.0%	0.7%	0.3%	0.5%	0.2%	0.5%
Post/pole/support	5.6%	4.0%	2.7%	1.8%	0.8%	2.8%
Culvert/ditch	0.0%	2.4%	1.6%	1.3%	0.8%	1.7%
Embankment	0.0%	1.3%	0.5%	0.4%	0.5%	0.8%
Tree	11.1%	3.6%	2.4%	1.8%	0.4%	2.5%
Other fixed object	0.0%	2.9%	1.8%	0.9%	0.7%	1.9%
	0.3%	36.4%	33.8%	15.4%	14.1%	100.0%

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

N = 6539

	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	4.8%	2.1%	1.6%	0.7%	0.3%	1.5%
striking	52.4%	27.5%	20.8%	18.2%	15.4%	22.3%
struck	0.0%	1.5%	1.8%	2.4%	2.1%	1.8%
both	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Multi vehicle crashes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
non collision	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
striking	14.3%	37.2%	37.6%	34.2%	34.4%	36.4%
struck	28.6%	27.9%	33.0%	39.9%	42.2%	33.4%
both	0.0%	3.6%	5.1%	4.4%	5.4%	4.5%
	0.3%	36.8%	33.7%	15.2%	13.9%	100.0%

3 GENERAL ESTIMATES SYSTEM CASUALTY FILE (1989) - SOUTHERN 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 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, 32-34% of drivers involved in daytime crashes were young drivers, while in night-time crashes they represented 43-45%. 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 409 drivers involved in daytime crashes in the 'off roadway/shoulder/parking lane' category, 193 (47%) were young drivers. For night-time crashes in this 'off roadway' category, the total number of drivers increased to 531, which was also reflected in an increase in the number of young drivers involved (302, representing 57% of the night-time total). Hence, in absolute terms, there was an increase of about 57% in the number of young drivers involved in night-time, 'off roadway' crashes. This compares with a night-time increase of 20% for drivers in the 26-40 age group.

An increase in proportions is also apparent between young drivers involved in daytime (32%) and night-time (39%) crashes in the 'on roadway' category. The total number of drivers involved in night-time crashes within this category (n=1584), however, is far less than the total number of drivers involved in similar daytime crashes (n=3627). 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 193, while young drivers involved in daytime 'on roadway' crashes is 1144. This gives a ratio of 1:6. Where night-time crashes involving young drivers are concerned, the number involved in 'off roadway' collisions is 302 while the number involved in 'on roadway' collisions is 622, 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:

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GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MAXIMUM INJURY SEVERITY (CRASH LEVEL) BY AGE GROUP N = 6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Nonincapacitating injury	30.0%	55.8%	58.5%	55.0%	55.3%	56.4%
Incapacitating injury	60.0%	42.1%	40.2%	42.6%	41.3%	41.4%
Fatal injury	10.0%	1.9%	0.9%	2.0%	3.0%	1.8%
Unknown injury severity	0.0%	0.2%	0.4%	0.3%	0.4%	0.3%
	0.2%	33.3%	33.6%	15.7%	17.2%	100.0%

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Nonincapacitating injury	63.6%	55.2%	54.6%	59.5%	56.4%	29.6%
Incapacitating injury	36.4%	40.6%	42.8%	36.0%	40.1%	21.6%
Fatal injury	0.0%	3.9%	2.2%	4.2%	2.3%	1.7%
Unknown injury severity	0.0%	0.1%	0.4%	0.3%	1.2%	0.2%
Died prior	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
	0.5%	43.5%	33.6%	14.4%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MAXIMUM INJURY SEVERITY (VEHICLE LEVEL) BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No injury	0.0%	31.8%	34.3%	37.4%	35.4%	34.1%
Possible injury	0.0%	5.9%	7.9%	8.5%	9.3%	7.6%
Nonincapacitating injury	30.0%	36.3%	34.0%	28.0%	29.3%	33.0%
Incapacitating injury	60.0%	24.6%	23.1%	24.8%	23.7%	24.1%
Fatal injury	10.0%	1.1%	0.5%	1.3%	2.2%	1.1%
Injured (severity unknown)	0.0%	0.2%	0.1%	0.0%	0.1%	0.1%
	0.2%	33.3%	33.5%	15.7%	17.2%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No injury	27.3%	24.4%	28.4%	34.1%	39.2%	15.0%
Possible injury	0.0%	5.0%	6.1%	6.4%	1.8%	2.8%
Nonincapacitating injury	45.5%	40.6%	37.6%	37.3%	33.9%	20.5%
Incapacitating injury	27.3%	27.7%	26.3%	19.3%	22.8%	13.6%
Fatal injury	0.0%	2.3%	1.4%	2.9%	1.8%	1.1%
Injured (severity unknown)	0.0%	0.0%	0.3%	0.0%	0.6%	0.1%
	0.5%	43.6%	33.5%	14.4%	7.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF VEHICLES INVOLVED BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
1	50.0%	23.8%	17.6%	16.3%	14.7%	19.0%
2	50.0%	62.9%	64.2%	67.5%	70.3%	65.3%
3	0.0%	10.5%	13.4%	12.4%	11.7%	12.0%
4	0.0%	2.3%	3.5%	3.3%	2.4%	2.9%
5	0.0%	0.2%	0.8%	0.3%	0.1%	0.4%
6	0.0%	0.2%	0.3%	0.0%	0.7%	0.3%
7	0.0%	0.1%	0.1%	0.2%	0.0%	0.1%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
1	63.6%	41.5%	35.8%	31.7%	29.9%	19.9%
2	36.4%	50.3%	55.1%	55.1%	57.5%	28.3%
3	0.0%	6.9%	7.2%	11.2%	8.0%	4.1%
4	0.0%	0.6%	1.6%	1.6%	4.0%	0.7%
5	0.0%	0.6%	0.3%	0.3%	0.6%	0.2%
	0.5%	43.6%	33.7%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER INJURED IN CRASH BY AGE GROUP N = 6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured	0.0%	0.4%	1.2%	0.8%	0.3%	0.7%
1	60.0%	54.3%	53.4%	57.1%	50.6%	53.8%
2	20.0%	29.1%	28.7%	25.2%	31.1%	28.7%
3	20.0%	10.2%	9.7%	10.3%	12.4%	10.5%
4	0.0%	3.8%	4.6%	5.0%	3.1%	4.1%
5 or more	0.0%	2.1%	2.4%	1.7%	2.4%	2.2%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured	0.0%	1.3%	1.4%	0.3%	1.1%	0.6%
1	63.6%	52.1%	55.0%	57.7%	56.9%	29.0%
2	18.2%	27.0%	24.1%	23.7%	27.0%	13.6%
3	0.0%	10.5%	11.8%	10.9%	8.6%	5.8%
4	18.2%	5.5%	3.9%	5.4%	5.2%	2.7%
5 or more	0.0%	3.7%	3.8%	1.9%	1.1%	1.7%
	0.5%	43.6%	33.7%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER INJURED IN VEHICLE BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured	0.0%	32.1%	35.3%	38.1%	35.7%	34.7%
1	70.0%	50.9%	49.3%	48.5%	50.7%	50.0%
2	20.0%	13.4%	11.5%	10.1%	11.6%	12.0%
3	10.0%	1.9%	2.9%	2.3%	1.1%	2.2%
4 or more	0.0%	1.7%	0.9%	0.9%	0.9%	1.2%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured	27.3%	25.3%	29.5%	34.3%	40.2%	15.6%
1	36.4%	49.3%	53.2%	47.8%	43.7%	26.6%
2	18.2%	17.4%	11.0%	14.7%	13.2%	7.7%
3	0.0%	5.7%	4.8%	2.6%	2.3%	2.5%
4 or more	18.2%	2.3%	1.5%	0.6%	0.6%	0.9%
	0.5%	43.6%	33.7%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - *SOUTHERN REGION
NUMBER OF PERSONS INVOLVED IN CRASH BY AGE GROUP N = 6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
1	10.0%	8.0%	6.6%	6.3%	4.1%	6.6%
2	40.0%	35.4%	34.7%	39.5%	36.0%	36.0%
3	30.0%	23.3%	22.4%	21.8%	28.7%	23.7%
4	0.0%	15.9%	14.8%	17.0%	16.5%	15.8%
5	10.0%	9.3%	10.2%	7.1%	7.0%	8.9%
6	0.0%	3.4%	5.1%	3.7%	3.3%	4.0%
7	0.0%	2.2%	2.8%	1.7%	1.6%	2.2%
8 or more	10.0%	2.6%	3.4%	2.9%	2.8%	2.9%
	0.3%	33.5%	33.4%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
1	10.0%	18.5%	18.3%	13.2%	9.7%	8.9%
2	30.0%	28.7%	27.8%	34.8%	41.3%	16.0%
3	20.0%	21.1%	21.0%	23.3%	22.6%	11.4%
4	20.0%	12.9%	14.3%	10.5%	12.9%	6.9%
5	10.0%	9.5%	8.3%	6.6%	7.1%	4.5%
6	10.0%	3.9%	5.6%	6.3%	3.2%	2.5%
7	0.0%	2.8%	3.5%	2.4%	0.0%	1.4%
8 or more	0.0%	2.7%	1.4%	2.8%	3.2%	1.2%
	0.5%	43.4%	33.7%	14.5%	7.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DAY OF WEEK BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Sunday	20.0%	10.1%	9.7%	8.7%	10.6%	9.9%
Monday	10.0%	13.6%	14.1%	16.5%	17.4%	14.9%
Tuesday	10.0%	13.6%	14.5%	15.1%	14.3%	14.2%
Wednesday	10.0%	14.4%	14.3%	13.4%	14.0%	14.1%
Thursday	10.0%	15.9%	15.8%	14.6%	14.9%	15.5%
Friday	30.0%	19.2%	17.2%	18.7%	16.7%	18.0%
Saturday	10.0%	13.3%	14.3%	13.1%	12.1%	13.4%
	0.2%	33.2%	33.8%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Sunday	0.0%	19.6%	14.3%	12.5%	10.3%	8.5%
Monday	9.1%	9.7%	10.1%	9.9%	9.2%	5.2%
Tuesday	18.2%	8.7%	11.2%	11.2%	12.6%	5.5%
Wednesday	0.0%	11.1%	11.0%	13.5%	10.9%	6.1%
Thursday	18.2%	11.0%	13.2%	16.7%	15.5%	6.9%
Friday	9.1%	18.5%	18.0%	13.8%	21.3%	9.5%
Saturday	45.5%	21.3%	22.2%	22.4%	20.1%	11.6%
	0.5%	43.6%	33.6%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
WEEKDAY VERSUS WEEKEND BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Weekday	70.0%	76.6%	76.0%	78.2%	77.3%	76.7%
Weekend	30.0%	23.4%	24.0%	21.8%	22.7%	23.3%
	0.2%	33.2%	33.8%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Weekday	54.5%	59.1%	63.5%	65.1%	69.5%	33.2%
Weekend	45.5%	40.9%	36.5%	34.9%	30.5%	20.1%
	0.5%	43.6%	33.6%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
HOUR OF ACCIDENT BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
6 am - 12 pm	0.0%	39.3%	42.9%	42.1%	46.6%	42.1%
12 pm - 6 pm	100.0%	60.7%	57.1%	57.9%	53.4%	57.9%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
6 pm - 12 am	54.5%	71.6%	77.0%	81.1%	89.1%	40.6%
12 am - 6 am	45.5%	28.4%	23.0%	18.9%	10.9%	12.8%
	0.5%	43.6%	33.7%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TIME PERIOD BY WEEKDAY/WEEKEND BY AGE GROUP N=6539

DAY

		0-15	16-25	26-40	41-55	56-98	Total
Weekday:	6 am - 12 pm	0.0%	23.3%	27.0%	28.8%	25.9%	25.8%
	12 pm - 6 pm	70.0%	53.3%	49.0%	49.5%	51.4%	50.9%
Weekend:	6 am - 12 pm	0.0%	6.6%	7.4%	5.9%	8.6%	7.1%
	12 pm - 6 pm	30.0%	16.8%	16.7%	15.9%	14.1%	16.2%
		0.2%	33.2%	33.8%	15.7%	17.1%	100.0%

NIGHT

		0-15	16-25	26-40	41-55	56-98	Total
Weekday:	12 am - 6 am	18.2%	11.0%	9.9%	9.0%	6.3%	10.0%
	6 pm - 12 am	36.4%	48.1%	53.5%	56.1%	63.2%	52.2%
Weekend:	12 am - 6 am	27.3%	17.2%	13.1%	9.6%	4.6%	13.8%
	6 pm - 12 am	18.2%	23.7%	23.4%	25.3%	25.9%	24.0%
		0.5%	43.6%	33.6%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
RURAL/URBAN BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Urban	20.0%	27.6%	37.5%	34.4%	28.1%	32.1%
10% Rural	10.0%	13.1%	14.0%	17.7%	24.0%	16.0%
20% Rural	10.0%	4.6%	3.2%	4.8%	3.7%	4.0%
30% Rural	20.0%	25.9%	21.2%	19.0%	18.3%	21.9%
40% Rural	0.0%	3.4%	2.4%	1.4%	2.7%	2.6%
50% Rural	0.0%	3.2%	3.5%	3.1%	5.0%	3.6%
70% Rural	30.0%	17.6%	13.0%	14.9%	15.1%	15.2%
90% Rural	10.0%	4.6%	5.1%	4.7%	3.0%	4.5%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Urban	27.3%	28.6%	32.1%	31.7%	31.0%	16.2%
10% Rural	0.0%	12.2%	14.1%	18.6%	24.7%	7.8%
20% Rural	9.1%	7.2%	6.5%	3.8%	4.6%	3.3%
30% Rural	27.3%	24.6%	22.2%	22.4%	17.8%	12.2%
40% Rural	0.0%	4.3%	4.1%	6.1%	4.0%	2.4%
50% Rural	18.2%	4.3%	5.6%	5.1%	4.6%	2.6%
70% Rural	18.2%	14.9%	10.9%	9.6%	10.9%	6.7%
90% Rural	0.0%	3.9%	4.5%	2.6%	2.3%	2.0%
	0.5%	43.6%	33.7%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
SPEED LIMIT (IN MILES AND KM/H) BY AGE GROUP N = 6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
0 (car-park, etc)	0.0%	0.3%	0.2%	0.0%	0.3%	0.2%
5 (8 km/h)	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%
10 (17 km/h)	0.0%	0.1%	0.2%	0.3%	0.0%	0.1%
15 (24 km/h)	0.0%	1.2%	0.6%	0.6%	0.6%	0.8%
20 (32 km/h)	10.0%	0.5%	0.2%	0.6%	0.6%	0.5%
25 (40 km/h)	20.0%	7.4%	6.1%	5.8%	6.3%	6.5%
30 (48 km/h)	10.0%	15.3%	15.1%	16.6%	15.2%	15.4%
35 (56 km/h)	10.0%	21.5%	22.1%	20.0%	21.7%	21.5%
40 (64 km/h)	10.0%	10.5%	12.0%	11.3%	12.3%	11.4%
45 (72 km/h)	10.0%	16.6%	17.7%	18.3%	20.3%	17.9%
50 (80 km/h))	0.0%	3.8%	4.5%	3.6%	3.1%	3.9%
55 (89 km/h)	30.0%	21.9%	20.5%	21.5%	19.0%	20.9%
65 (105 k/ph)	0.0%	1.0%	0.8%	1.3%	0.4%	0.9%
	0.3%	33.2%	33.7%	15.8%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
0 (car-park, etc)	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
5 (8 km/h)	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
10 (17 km/h)	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
15 (24 km/h)	11.1%	0.3%	0.0%	0.3%	0.6%	0.2%
20 (32 km/h)	0.0%	0.6%	0.6%	0.7%	0.6%	0.3%
25 (40 km/h)	0.0%	6.8%	6.0%	5.0%	3.0%	3.2%
30 (48 km/h)	11.1%	14.0%	15.3%	15.9%	16.1%	7.9%
35 (56 km/h)	0.0%	20.4%	21.4%	20.9%	19.6%	11.0%
40 (64 km/h)	22.2%	12.0%	11.2%	13.2%	14.3%	6.5%
45 (72 km/h)	44.4%	17.4%	16.1%	21.5%	20.8%	9.6%
50 (80 km/h))	0.0%	2.8%	2.6%	2.6%	4.2%	1.5%
55 (89 km/h)	11.1%	24.5%	24.5%	17.5%	19.6%	12.2%
60 (97 km/h)	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%
65 (105 km/h)	0.0%	1.0%	1.9%	2.0%	1.2%	0.8%
	0.4%	43.6%	33.4%	14.5%	8.1%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
INTERSTATE HIGHWAY BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No (not highway)	100.0%	98.0%	97.7%	97.4%	98.6%	97.9%
Yes (on highway)	0.0%	2.0%	2.3%	2.6%	1.4%	2.1%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No (not highway)	100.0%	96.7%	95.5%	94.9%	98.3%	51.2%
Yes (on highway)	0.0%	3.3%	4.5%	5.1%	1.7%	2.0%
	0.5%	43.6%	33.6%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
LAND USE BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Population 25000 - 50000	0.0%	3.7%	4.5%	5.5%	6.7%	4.7%
Population 50000 - 100000	11.1%	13.9%	11.7%	8.9%	11.5%	11.9%
Population 100000+	22.2%	28.3%	36.3%	34.6%	27.9%	31.9%
Other Area	66.7%	54.2%	47.6%	51.0%	53.9%	51.4%
	0.2%	33.0%	33.6%	15.9%	17.3%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Population 25000 - 50000	0.0%	3.1%	4.7%	5.5%	5.1%	2.2%
Population 50000 - 100000	18.2%	12.3%	12.1%	10.7%	13.4%	6.4%
Population 100000+	36.4%	30.7%	32.4%	28.0%	22.9%	16.0%
Other Area	45.5%	54.0%	50.7%	55.7%	58.6%	28.2%
	0.5%	43.5%	33.7%	14.4%	7.8%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROADWAY ALIGNMENT BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Straight	80.0%	87.5%	90.6%	88.8%	92.8%	89.6%
Curve	20.0%	12.5%	9.4%	11.2%	7.2%	10.4%
	0.2%	33.2%	33.8%	15.7%	17.0%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Straight	90.9%	83.2%	85.2%	88.6%	89.9%	45.3%
Curve	9.1%	16.8%	14.8%	11.4%	10.1%	7.9%
	0.5%	43.8%	33.5%	14.4%	7.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROADWAY PROFILE BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Level	77.8%	68.6%	72.8%	74.3%	79.3%	72.8%
Grade	22.2%	27.0%	23.7%	23.1%	19.2%	23.9%
Hillcrest	0.0%	3.7%	3.1%	2.2%	1.3%	2.9%
Other	0.0%	0.6%	0.4%	0.4%	0.2%	0.4%
	0.3%	33.3%	32.8%	16.1%	17.5%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Level	62.5%	70.4%	71.5%	72.0%	81.9%	36.2%
Grade	37.5%	25.6%	25.7%	24.4%	15.9%	12.5%
Hillcrest	0.0%	3.4%	2.1%	2.4%	2.2%	1.4%
Other	0.0%	0.5%	0.7%	1.2%	0.0%	0.3%
	0.5%	44.4%	32.7%	14.4%	8.1%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFICWAY FLOW BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Two way undivided	100.0%	66.8%	61.0%	59.7%	59.8%	62.6%
Divided highway	0.0%	30.5%	34.6%	36.8%	38.4%	34.1%
Oneway	0.0%	2.6%	4.4%	3.5%	1.9%	3.2%
	0.3%	33.2%	33.4%	15.6%	17.5%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Two way undivided	90.9%	67.3%	63.0%	62.2%	52.6%	33.3%
Divided highway	9.1%	29.8%	35.3%	33.5%	44.9%	17.3%
Oneway	0.0%	2.9%	1.7%	4.4%	2.6%	1.4%
	0.6%	43.6%	33.1%	14.5%	8.2%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
RELATION TO ROADWAY BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
On roadway	50.0%	84.2%	89.6%	90.5%	94.4%	88.7%
On shoulder/parking lane	0.0%	1.3%	0.9%	0.9%	1.0%	1.0%
Off roadway/shoulder/parking lane	50.0%	14.2%	9.3%	7.9%	4.6%	10.0%
On median	0.0%	0.3%	0.2%	0.6%	0.0%	0.3%
Other	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
On roadway	45.5%	65.5%	75.3%	82.4%	85.6%	38.7%
On shoulder/parking lane	0.0%	1.9%	2.9%	2.9%	0.6%	1.2%
Off roadway/shoulder/parking lane	54.5%	31.8%	20.9%	14.7%	13.8%	13.0%
On median	0.0%	0.8%	1.0%	0.0%	0.0%	0.4%
	0.5%	43.6%	33.6%	14.3%	8.0%	100.0%

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

N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Non junction	50.0%	38.8%	38.2%	33.6%	25.5%	35.5%
Intersection	30.0%	42.4%	40.9%	44.9%	52.6%	44.0%
Intersection related	20.0%	7.5%	9.7%	10.1%	10.5%	9.2%
Interchange area	0.0%	0.1%	0.3%	0.2%	0.1%	0.2%
Driveway/alley	0.0%	10.4%	8.9%	9.5%	10.9%	9.8%
Entrance/exit ramp	0.0%	0.3%	1.5%	0.8%	0.1%	0.7%
Railway crossing	0.0%	0.1%	0.1%	0.2%	0.1%	0.1%
Other	0.0%	0.4%	0.4%	0.8%	0.1%	0.4%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Non junction	54.5%	50.4%	48.7%	44.2%	31.6%	25.3%
Intersection	45.5%	35.3%	36.6%	35.9%	48.3%	19.7%
Intersection related	0.0%	6.3%	5.8%	8.7%	12.6%	3.7%
Interchange area	0.0%	0.2%	0.3%	0.6%	0.0%	0.1%
Driveway/alley	0.0%	6.6%	7.0%	8.3%	4.6%	3.6%
Entrance/exit ramp	0.0%	0.7%	0.4%	0.6%	1.7%	0.4%
Railway crossing	0.0%	0.2%	0.5%	1.0%	0.6%	0.2%
Other	0.0%	0.2%	0.7%	0.6%	0.6%	0.2%
	0.5%	43.6%	33.6%	14.4%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF TRAVEL LANES BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
1	0.0%	1.1%	1.4%	1.0%	1.4%	1.2%
2	80.0%	61.7%	52.1%	52.9%	52.5%	55.6%
3	10.0%	12.6%	16.9%	16.1%	16.8%	15.3%
4	10.0%	15.8%	19.7%	21.3%	19.8%	18.6%
5	0.0%	5.6%	4.8%	5.2%	5.2%	5.2%
6	0.0%	1.6%	2.9%	2.2%	2.4%	2.3%
7 or more lanes	0.0%	1.6%	2.3%	1.2%	1.9%	1.8%
	0.3%	33.1%	33.7%	15.7%	17.2%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
1	0.0%	0.7%	0.8%	1.1%	1.9%	0.5%
2	66.7%	61.5%	57.1%	54.7%	52.3%	30.4%
3	0.0%	14.0%	13.9%	19.0%	21.3%	7.9%
4	22.2%	15.3%	18.1%	13.5%	17.4%	8.4%
5	11.1%	5.4%	5.6%	6.6%	4.5%	2.9%
6	0.0%	2.3%	3.4%	3.3%	1.9%	1.4%
7 or more lanes	0.0%	1.0%	1.1%	1.8%	0.6%	0.6%
	0.5%	43.7%	33.4%	14.3%	8.1%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFIC CONTROL DEVICE BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
No controls	70.0%	58.0%	55.0%	53.1%	47.0%	54.3%
Traffic signals						
with ped signal	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%
pedestrian signal not known	10.0%	19.2%	23.7%	24.5%	25.7%	22.6%
flashing traffic signal/beacon	0.0%	0.7%	0.7%	1.7%	1.0%	0.9%
other traffic signal	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Regulatory, school zone or warning signs						
stop sign	10.0%	15.8%	13.1%	13.2%	17.7%	14.8%
yield sign	0.0%	0.7%	0.7%	0.9%	0.7%	0.7%
warning sign	0.0%	0.2%	0.4%	0.8%	0.3%	0.4%
other sign	0.0%	0.2%	0.2%	0.3%	0.0%	0.2%
manned crossing	0.0%	0.4%	0.4%	0.5%	0.3%	0.4%
active devices	0.0%	0.2%	0.1%	0.3%	0.1%	0.2%
Traf control present - no details	10.0%	1.6%	2.1%	1.6%	1.4%	1.8%
Other traffic control	0.0%	2.8%	3.3%	3.1%	5.7%	3.5%
	0.2%	33.1%	33.6%	15.8%	17.2%	100.0%

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
No controls	63.6%	60.7%	60.8%	54.5%	51.2%	31.3%
Traffic signals						
with pedestrian signal	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
pedestrian signal not known	9.1%	20.1%	20.4%	23.4%	29.7%	11.3%
flashing traffic signal/beacon	0.0%	1.4%	2.2%	1.6%	1.2%	0.9%
other traffic signal	0.0%	0.2%	0.0%	0.3%	0.0%	0.1%
unknown traffic signal	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Regulatory, school zone or warning signs						
stop sign	18.2%	9.5%	9.9%	11.7%	11.6%	5.4%
yield sign	0.0%	1.0%	0.8%	0.6%	0.6%	0.4%
warning sign	0.0%	1.0%	0.1%	0.3%	0.0%	0.3%
other sign	0.0%	0.4%	0.6%	1.3%	0.6%	0.3%
Manned crossing	0.0%	0.4%	0.1%	0.6%	0.0%	0.2%
Traf control present - no details	0.0%	1.8%	2.1%	1.0%	2.3%	1.0%
Other traffic control	9.1%	3.3%	2.9%	4.5%	2.9%	1.8%
	0.5%	43.6%	33.5%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFIC DEVICE FUNCTIONING BY AGE GROUP N-6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No controls	77.8%	59.1%	56.8%	54.6%	48.8%	55.9%
Device not functioning	0.0%	0.3%	0.1%	0.3%	0.1%	0.2%
Device functioning	22.2%	40.6%	43.1%	45.1%	51.0%	43.9%
	0.2%	33.4%	33.5%	15.9%	17.0%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No controls	63.6%	62.9%	62.9%	56.2%	52.7%	32.2%
Device not functioning	0.0%	0.1%	0.7%	0.7%	0.6%	0.2%
Device functioning	36.4%	37.0%	36.4%	43.1%	46.7%	20.3%
	0.5%	43.6%	33.5%	14.4%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
SEX OF DRIVER BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Male	50.0%	51.7%	48.2%	47.9%	55.5%	50.6%
Female	50.0%	48.3%	51.8%	52.1%	44.5%	49.4%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Male	72.7%	63.1%	63.7%	60.3%	58.6%	33.4%
Female	27.3%	36.9%	36.3%	39.7%	41.4%	20.0%
	0.5%	43.5%	33.7%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ALCOHOL USE (DRIVER) BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	0.0%	2.5%	3.3%	3.6%	0.9%	2.7%
No alcohol involved	100.0%	97.5%	96.7%	96.4%	99.1%	97.3%
	0.2%	33.1%	33.7%	15.8%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	20.0%	16.4%	18.6%	11.5%	7.6%	8.3%
No alcohol involved	80.0%	83.6%	81.4%	88.5%	92.4%	44.4%
	0.5%	43.3%	33.9%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ALCOHOL INVOLVEMENT IN CRASH BY AGE GROUP N = 6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	0.0%	4.6%	4.7%	4.7%	1.6%	4.1%
No alcohol involved	100.0%	95.4%	95.3%	95.3%	98.4%	95.9%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	27.3%	21.7%	25.9%	19.6%	19.8%	12.0%
No alcohol involved	72.7%	78.3%	74.1%	80.4%	80.2%	40.9%
	0.5%	43.5%	33.8%	14.2%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DRIVER PHYSICAL/MENTAL IMPAIRMENT BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No impairment	100.0%	97.4%	97.2%	96.7%	97.4%	97.2%
Drowsy/fatigued	0.0%	1.2%	1.0%	0.3%	0.1%	0.8%
Ill / blackout	0.0%	0.2%	0.1%	1.2%	0.1%	0.3%
Drugs/medication	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Illicit drugs	0.0%	0.2%	0.2%	0.0%	0.1%	0.2%
Deaf	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%
Hit-and-run vehicle	0.0%	0.4%	0.5%	0.0%	0.1%	0.3%
Physical/mental impairment - no details	0.0%	0.2%	0.2%	1.1%	0.9%	0.5%
Other physical/mental impairment	0.0%	0.3%	0.6%	0.5%	1.0%	0.5%
	0.2%	33.2%	33.7%	15.8%	17.0%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No impairment	81.8%	92.2%	91.1%	93.1%	98.2%	49.0%
Drowsy/fatigued	0.0%	2.4%	2.1%	1.6%	0.0%	1.1%
Ill / blackout	0.0%	0.2%	0.0%	0.3%	0.6%	0.1%
Emotional	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Illicit drugs	0.0%	1.0%	0.7%	0.7%	0.0%	0.4%
Wheelchair	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Deaf	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Hit-and-run vehicle	9.1%	1.8%	1.0%	1.0%	0.0%	0.7%
Physical/mental impairment - no details	0.0%	0.5%	0.8%	0.3%	0.0%	0.3%
Other physical/mental impairment	9.1%	1.7%	4.0%	2.9%	1.2%	1.4%
	0.5%	43.8%	33.5%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DRIVER'S ACTION BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Not avoiding/swerving	100.0%	96.3%	96.5%	98.1%	98.7%	97.1%
Slippery or loose surface	0.0%	1.0%	1.2%	0.5%	0.4%	0.9%
Blowout	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%
Animals on road	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%
Vehicle on road	0.0%	1.0%	0.7%	0.9%	0.1%	0.7%
Phantom vehicle	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Ped/cyclist/non motorist	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%
Water/snow/oil slick	0.0%	0.2%	0.1%	0.2%	0.0%	0.1%
Hit-and-run vehicle	0.0%	0.4%	0.5%	0.0%	0.1%	0.3%
Avoiding action - no details	0.0%	0.6%	0.9%	0.0%	0.3%	0.5%
Other cause	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%
	0.2%	33.2%	33.8%	15.7%	17.0%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Not avoiding/swerving	90.9%	93.2%	95.5%	92.6%	97.1%	50.1%
Wind from passing truck	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%
Slippery or loose surface	0.0%	1.3%	0.8%	1.3%	0.6%	0.6%
Blowout	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Debris/object on road	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%
Ruts/holes/bumps	0.0%	0.0%	0.3%	0.0%	0.6%	0.1%
Animals on road	0.0%	0.6%	0.7%	0.0%	0.0%	0.3%
Vehicle on road	0.0%	1.4%	0.4%	1.0%	0.0%	0.5%
Phantom vehicle	0.0%	0.2%	0.3%	1.0%	0.0%	0.2%
Ped/cyclist/non motorist	0.0%	0.1%	0.6%	1.0%	0.6%	0.2%
Water/snow/oil slick	0.0%	0.1%	0.3%	0.3%	0.0%	0.1%
Hit-and-run vehicle	9.1%	1.7%	1.0%	1.0%	0.0%	0.7%
Avoiding action - no details	0.0%	0.6%	0.3%	1.6%	0.6%	0.3%
Other cause	0.0%	0.3%	0.0%	0.0%	0.6%	0.1%
	0.5%	43.6%	33.5%	14.4%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VIOLATIONS CHARGED BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
None	80.0%	66.2%	71.8%	75.0%	66.7%	69.6%
Alcohol/drugs	0.0%	1.4%	1.7%	2.0%	0.3%	1.4%
Speeding	0.0%	3.8%	3.1%	2.8%	2.3%	3.2%
Alcohol or drugs and speeding	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%
Reckless driving	10.0%	1.5%	0.8%	0.6%	0.4%	1.0%
Driving with suspended licence	0.0%	1.2%	1.1%	0.2%	0.0%	0.8%
Failure to giveway	0.0%	8.5%	6.3%	7.5%	15.7%	8.8%
Running traffic controls/stop sign	0.0%	1.8%	1.9%	1.6%	2.6%	1.9%
Other violation	10.0%	15.3%	13.1%	10.3%	11.9%	13.2%
	0.2%	33.2%	33.8%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
None	45.5%	64.5%	66.8%	70.1%	69.9%	35.3%
Alcohol/drugs	0.0%	7.2%	9.7%	7.4%	2.9%	4.1%
Speeding	9.1%	3.9%	1.6%	1.6%	2.3%	1.4%
Alcohol or drugs and speeding	0.0%	0.8%	0.8%	0.3%	0.0%	0.4%
Reckless driving	0.0%	3.1%	1.5%	1.6%	1.7%	1.2%
Driving with suspended licence	9.1%	1.4%	1.1%	0.3%	0.0%	0.6%
Failure to giveway	9.1%	5.0%	5.6%	7.1%	14.5%	3.3%
Running traffic controls/stop sign	0.0%	2.5%	1.4%	1.0%	1.2%	1.0%
Other violation	27.3%	11.7%	11.5%	10.6%	7.5%	6.0%
	0.5%	43.6%	33.7%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF OCCUPANTS IN VEHICLE BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
1	30.0%	54.9%	58.2%	64.4%	61.5%	58.6%
2	50.0%	25.2%	19.1%	17.9%	24.0%	21.9%
3	10.0%	7.8%	9.4%	7.0%	5.3%	7.8%
4	10.0%	4.1%	4.2%	2.7%	1.9%	3.5%
5 or more	0.0%	1.8%	1.4%	1.7%	0.9%	1.5%
only injured reported	0.0%	6.1%	7.7%	6.2%	6.4%	6.7%
	0.2%	33.2%	33.8%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
1	30.0%	46.3%	59.0%	58.5%	64.0%	28.3%
2	20.0%	28.4%	20.1%	25.1%	22.1%	13.0%
3	20.0%	10.6%	8.3%	6.8%	4.7%	4.7%
4	30.0%	5.2%	3.7%	3.5%	2.3%	2.3%
5 or more	0.0%	2.3%	3.2%	0.6%	1.2%	1.2%
only injured reported	0.0%	7.1%	5.7%	5.5%	5.8%	3.3%
	0.5%	43.6%	33.5%	14.4%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAVEL SPEED OF VEHICLE IN MILES (AND KM/H) BY AGE GROUP N = 6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Stationary	20.0%	14.5%	21.8%	24.1%	15.9%	18.8%
01 - 12 (01 - 20 km/h)	0.0%	16.9%	15.0%	15.9%	24.4%	17.4%
13 - 24 (21 - 40 km/h)	20.0%	18.7%	19.8%	17.2%	24.2%	19.8%
25 - 35 (41 - 60 km/h)	20.0%	18.6%	18.6%	22.1%	20.1%	19.5%
36 - 50 (61 - 80 km/h)	20.0%	20.6%	18.5%	13.8%	12.7%	17.4%
51 - 60 (81 - 100 km/h)	0.0%	7.3%	4.5%	5.3%	1.9%	5.1%
Over 60 (>100 km/h)	20.0%	3.2%	1.8%	1.6%	0.8%	2.1%
	0.2%	32.1%	32.7%	16.8%	18.2%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Stationary	0.0%	9.4%	13.4%	15.4%	19.8%	5.6%
01 - 12 (01 - 20 km/h)	0.0%	8.1%	8.5%	11.5%	22.5%	4.6%
13 - 24 (21 - 40 km/h)	20.0%	17.3%	16.0%	17.6%	20.7%	7.8%
25 - 35 (41 - 60 km/h)	20.0%	17.9%	22.8%	26.9%	16.2%	9.3%
36 - 50 (61 - 80 km/h)	20.0%	26.3%	23.1%	20.9%	12.6%	10.5%
51 - 60 (81 - 100 km/h)	0.0%	12.3%	9.7%	5.5%	7.2%	4.5%
Over 60 (>100 km/h)	40.0%	8.7%	6.6%	2.2%	0.9%	2.9%
	0.4%	44.5%	30.0%	15.6%	9.5%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MODEL YEAR BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
1986 - 1989	33.3%	32.4%	35.0%	38.9%	30.0%	33.9%
1981 - 1985	44.4%	32.9%	35.4%	32.4%	38.1%	34.6%
1976 - 1980	11.1%	25.2%	22.2%	21.9%	22.6%	23.2%
1971 - 1975	11.1%	7.2%	5.2%	5.5%	6.9%	6.2%
1974 and earlier	0.0%	2.4%	2.2%	1.3%	2.4%	2.1%
	0.2%	33.2%	33.7%	15.7%	17.2%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
1986 - 1989	30.0%	30.4%	34.1%	33.7%	26.4%	17.0%
1981 - 1985	30.0%	33.4%	31.1%	30.1%	37.9%	17.4%
1976 - 1980	30.0%	26.5%	25.2%	23.9%	27.0%	13.8%
1971 - 1975	10.0%	6.7%	7.3%	8.4%	7.5%	3.8%
1974 and earlier	0.0%	3.0%	2.3%	3.9%	1.1%	1.5%
	0.5%	43.6%	33.7%	14.2%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VEHICLE DEFECTS BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No vehicle defects	100.0%	97.9%	98.0%	99.2%	99.4%	98.4%
Tyres	0.0%	0.7%	0.5%	0.2%	0.1%	0.4%
Brakes	0.0%	0.7%	0.7%	0.6%	0.1%	0.6%
Steering	0.0%	0.2%	0.1%	0.0%	0.1%	0.1%
Headlights	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Other lights (on vehicle)	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Wheels	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Trailer hitch	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Hit-and-run vehicle	0.0%	0.3%	0.4%	0.0%	0.0%	0.2%
Vehicle defects - no details	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
Other vehicle defect	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%
	0.2%	33.1%	33.8%	15.8%	17.0%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No vehicle defects	90.9%	97.6%	98.1%	97.7%	100.0%	52.2%
Tyres	0.0%	0.6%	0.1%	0.7%	0.0%	0.2%
Brakes	0.0%	0.1%	0.1%	0.3%	0.0%	0.1%
Steering	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Other lights (on vehicle)	0.0%	0.2%	0.3%	0.3%	0.0%	0.1%
Wheels	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%
Hit-and-run vehicle	9.1%	1.0%	0.6%	0.7%	0.0%	0.4%
Vehicle defects - no details	0.0%	0.1%	0.1%	0.3%	0.0%	0.1%
Other vehicle defect	0.0%	0.2%	0.4%	0.0%	0.0%	0.1%
	0.5%	43.5%	33.6%	14.3%	8.1%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
LIGHT CONDITIONS BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Daylight	90.0%	94.7%	92.9%	94.2%	96.4%	94.3%
Dark	0.0%	1.0%	1.5%	1.9%	1.1%	1.4%
Dark but lighted	0.0%	1.3%	2.3%	1.9%	0.7%	1.6%
Dawn	0.0%	1.0%	0.9%	0.6%	0.4%	0.8%
Dusk	10.0%	1.9%	2.3%	1.4%	1.3%	1.8%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Daylight	18.2%	13.9%	15.4%	19.7%	26.2%	8.5%
Dark	36.4%	42.8%	39.0%	31.9%	32.1%	20.4%
Dark but lighted	36.4%	38.6%	39.9%	40.1%	33.9%	20.3%
Dawn	0.0%	0.5%	0.3%	0.7%	0.0%	0.2%
Dusk	9.1%	4.1%	5.3%	7.6%	7.7%	2.8%
	0.5%	43.7%	33.5%	14.3%	7.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ATMOSPHERIC CONDITION BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No adverse conditions	100.0%	84.3%	82.1%	86.3%	87.2%	84.4%
Rain	0.0%	14.8%	15.8%	12.3%	11.9%	14.2%
Sleet	0.0%	0.2%	0.9%	0.8%	0.4%	0.6%
Snow	0.0%	0.4%	0.9%	0.6%	0.1%	0.6%
Fog	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%
Other	0.0%	0.1%	0.4%	0.0%	0.1%	0.2%
	0.2%	33.1%	33.7%	15.7%	17.2%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No adverse conditions	81.8%	80.6%	83.7%	84.0%	88.2%	43.7%
Rain	18.2%	16.3%	14.1%	13.7%	8.9%	7.7%
Sleet	0.0%	0.5%	0.6%	1.3%	0.6%	0.3%
Snow	0.0%	0.2%	0.7%	0.3%	0.6%	0.2%
Fog	0.0%	2.0%	0.4%	0.3%	1.2%	0.6%
Other	0.0%	0.4%	0.6%	0.3%	0.6%	0.2%
	0.5%	43.7%	33.7%	14.2%	7.9%	100.0%

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

N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No obstruction	100.0%	95.3%	96.7%	95.5%	96.4%	96.0%
Precipitation	0.0%	0.4%	0.3%	0.8%	0.6%	0.4%
Glare/sun/headlights	0.0%	0.6%	0.2%	0.0%	0.3%	0.3%
Curve/hill/embankment	0.0%	0.7%	0.0%	0.3%	0.4%	0.3%
Building/billboard	0.0%	0.0%	0.1%	0.2%	0.0%	0.1%
Trees/crops/vegetation	0.0%	0.4%	0.4%	0.5%	0.1%	0.4%
Moving vehicle	0.0%	0.4%	0.7%	0.8%	0.4%	0.6%
Parked vehicle	0.0%	1.4%	0.8%	1.7%	0.6%	1.1%
Splash/spray from passing vehicle	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Inadequate demister	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Broken/dirty windscreen	0.0%	0.0%	0.0%	0.2%	0.3%	0.1%
Hit-and-run vehicle	0.0%	0.4%	0.5%	0.0%	0.1%	0.3%
Vision obscured - no details	0.0%	0.1%	0.0%	0.2%	0.6%	0.2%
Other obstruction	0.0%	0.3%	0.0%	0.0%	0.1%	0.1%
	0.2%	33.2%	33.8%	15.8%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No obstruction	90.9%	93.9%	97.5%	96.1%	96.0%	50.8%
Precipitation	0.0%	2.0%	0.3%	1.3%	1.7%	0.7%
Glare/sun/headlights	0.0%	0.3%	0.0%	0.3%	1.7%	0.2%
Curve/hill/embankment	0.0%	0.5%	0.1%	0.0%	0.0%	0.1%
Building/billboard	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Trees/crops/vegetation	0.0%	0.3%	0.1%	0.0%	0.0%	0.1%
Moving vehicle	0.0%	0.3%	0.0%	1.0%	0.0%	0.1%
Parked vehicle	0.0%	0.3%	0.4%	0.3%	0.0%	0.2%
Hit-and-run vehicle	9.1%	1.7%	1.0%	1.0%	0.0%	0.7%
Vision obscured - no details	0.0%	0.4%	0.1%	0.0%	0.0%	0.1%
Other obstruction	0.0%	0.2%	0.3%	0.0%	0.6%	0.1%
	0.5%	43.6%	33.5%	14.4%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROAD SURFACE CONDITION BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Dry	100.0%	77.9%	76.0%	80.3%	82.1%	78.4%
Wet	0.0%	21.0%	21.3%	18.3%	16.8%	19.9%
Snow/slush	0.0%	0.2%	0.5%	0.2%	0.0%	0.3%
Ice	0.0%	0.8%	2.0%	1.3%	0.9%	1.3%
Other	0.0%	0.1%	0.2%	0.0%	0.3%	0.1%
	0.2%	33.2%	33.7%	15.8%	17.2%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Dry	80.0%	74.7%	78.6%	78.5%	78.9%	40.8%
Wet	20.0%	23.8%	20.2%	18.9%	18.7%	11.4%
Snow/slush	0.0%	0.1%	0.4%	0.0%	0.6%	0.1%
Ice	0.0%	0.6%	0.8%	2.3%	0.6%	0.5%
Other	0.0%	0.7%	0.0%	0.3%	1.2%	0.2%
	0.5%	43.7%	33.6%	14.3%	7.9%	100.0%

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

N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Going straight	30.0%	58.9%	58.6%	57.6%	53.2%	57.5%
Slowing/stopping	10.0%	2.7%	4.1%	3.7%	3.4%	3.5%
Starting in traffic lane	0.0%	1.3%	0.9%	1.4%	3.2%	1.5%
Stopped in traffic lane	10.0%	8.9%	13.3%	16.4%	10.8%	11.9%
Passing/overtaking	0.0%	0.7%	0.5%	0.3%	0.4%	0.5%
Leaving parking spot	0.0%	0.0%	0.1%	0.3%	0.0%	0.1%
Parked	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Entering parking spot	0.0%	0.0%	0.1%	0.2%	0.0%	0.0%
Avoiding animal/ped/object/vehicle	0.0%	2.4%	1.7%	1.1%	0.3%	1.6%
Turning right	0.0%	2.3%	3.2%	2.3%	4.6%	3.0%
Turning left	30.0%	13.0%	9.8%	11.5%	20.3%	13.0%
U-turn	0.0%	0.3%	0.3%	0.3%	0.9%	0.4%
Reversing	0.0%	0.7%	0.8%	0.5%	0.3%	0.6%
Changing lanes/merging	0.0%	1.4%	1.5%	1.1%	1.0%	1.3%
Negotiating curve	10.0%	3.7%	2.3%	1.1%	0.6%	2.3%
Other	10.0%	3.7%	3.0%	2.2%	1.1%	2.8%
	0.2%	33.1%	33.8%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Going straight	72.7%	61.9%	62.5%	64.7%	56.1%	33.0%
Slowing/stopping	0.0%	2.9%	1.7%	2.6%	0.6%	1.2%
Starting in traffic lane	0.0%	0.8%	0.8%	1.0%	0.6%	0.4%
Stopped in traffic lane	0.0%	5.2%	6.5%	9.0%	12.7%	3.6%
Passing/overtaking	9.1%	1.3%	1.4%	0.6%	0.0%	0.6%
Leaving parking spot	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Entering parking spot	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Avoiding animal/ped/object/vehicle	0.0%	3.5%	2.3%	3.8%	0.6%	1.5%
Turning right	0.0%	1.8%	2.3%	2.2%	4.0%	1.2%
Turning left	9.1%	10.0%	10.2%	9.6%	17.3%	5.6%
U-turn	0.0%	0.6%	0.3%	0.3%	1.7%	0.3%
Reversing	0.0%	0.4%	0.1%	0.0%	0.0%	0.1%
Changing lanes/merging	0.0%	1.3%	2.2%	1.0%	1.7%	0.8%
Negotiating curve	0.0%	7.0%	5.1%	1.3%	1.2%	2.7%
Other	9.1%	3.2%	4.4%	3.8%	3.5%	2.0%
	0.5%	43.6%	33.5%	14.4%	8.0%	100.0%

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

N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No collision with moving vehicle	50.0%	24.1%	18.5%	17.0%	15.4%	19.7%
Rear end	20.0%	23.2%	28.7%	29.7%	24.5%	26.3%
Head on	0.0%	5.5%	4.9%	4.7%	3.2%	4.8%
Angle	30.0%	45.1%	45.9%	46.8%	55.7%	47.4%
Sideswipe, same direction	0.0%	0.9%	0.9%	0.8%	0.7%	0.9%
Sideswipe, opposite direction	0.0%	1.1%	1.1%	1.1%	0.6%	1.0%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No collision with moving vehicle	63.6%	42.3%	37.6%	33.2%	29.9%	20.5%
Rear end	0.0%	15 6%	16.9%	15.8%	18.4%	8.6%
Head on	0.0%	5.2%	5.8%	4.2%	6.3%	2.8%
Angle	36.4%	35.2%	38.4%	45.2%	45.4%	20.5%
Sideswipe, same direction	0.0%	0.9%	0.5%	1.3%	0.0%	0.4%
Sideswipe, opposite direction	0.0%	0.7%	0.8%	0.3%	0.0%	0.3%
	0.5%	43.6%	33.6%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
FIRST HARMFUL EVENT (CRASH LEVEL) BY AGE GROUP N = 6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Non collision						
Rollover	0.0%	1.3%	0.8%	0.9%	0.4%	0.9%
Other non collision	0.0%	1.3%	0.9%	1.1%	0.1%	1.0%
Collision with object - not fixed						
Pedestrian	0.0%	3.8%	4.8%	3.9%	5.3%	4.4%
Cycle or cyclist	0.0%	4.2%	3.0%	4.4%	5.2%	4.0%
Motor vehicle on road	50.0%	75.9%	81.6%	83.0%	84.7%	80.4%
Motor vehicle parked	0.0%	0.7%	1.0%	0.3%	0.9%	0.8%
Other object not fixed	10.0%	0.1%	0.2%	0.3%	0.0%	0.2%
Collision with fixed object						
Guardrail	0.0%	0.7%	0.4%	0.3%	0.1%	0.4%
Post/pole/support	0.0%	2.7%	1.9%	1.4%	0.4%	1.8%
Culvert/ditch	10.0%	2.1%	1.3%	1.1%	1.0%	1.5%
Curb	10.0%	0.7%	0.3%	0.2%	0.1%	0.4%
Embankment	0.0%	1.5%	0.8%	0.5%	0.4%	0.9%
Fence	0.0%	0.4%	0.4%	0.8%	0.1%	0.4%
Tree	20.0%	3.1%	1.5%	1.1%	0.3%	1.8%
Other fixed object	0.0%	1.5%	1.2%	0.8%	0.9%	1.2%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Non collision						
Rollover	18.2%	2.7%	2.6%	0.6%	1.1%	1.2%
Other non collision	0.0%	1.2%	1.1%	1.0%	0.0%	0.5%
Collision with object - not fixed						
Pedestrian	0.0%	5.6%	7.8%	7.7%	9.8%	3.7%
Cycle or cyclist	9.1%	1.2%	3.1%	5.1%	6.3%	1.5%
Motor vehicle on road	36.4%	57.9%	62.5%	67.0%	70.1%	32.8%
Motor vehicle parked	0.0%	1.9%	2.2%	2.6%	0.6%	1.1%
Other object not fixed	9.1%	0.5%	1.2%	2.2%	0.6%	0.6%
Collision with fixed object						
Guardrail	0.0%	1.4%	0.7%	1.0%	1.1%	0.6%
Post/pole/support	9.1%	6.2%	4.4%	2.9%	2.9%	2.6%
Culvert/ditch	9.1%	6.0%	4.1%	2.6%	4.0%	2.5%
Curb	0.0%	1.5%	1.4%	1.3%	0.0%	0.7%
Embankment	0.0%	3.2%	1.4%	1.0%	0.6%	1.1%
Fence	0.0%	1.6%	0.8%	0.3%	0.0%	0.5%
Tree	9.1%	5.2%	4.5%	2.9%	1.1%	2.3%
Other fixed object	0.0%	4.1%	2.3%	1.9%	1.7%	1.6%
	0.5%	43.5%	33.7%	14.3%	8.0%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MOST HARMFUL EVENT (VEHICLE LEVEL) BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Non collision						
Rollover	11.1%	2.5%	1.3%	1.3%	1.0%	1.7%
Other non collision	0.0%	1.3%	0.6%	0.5%	0.3%	0.8%
Collision with object - not fixed						
Pedestrian	0.0%	3.8%	4.7%	4.0%	5.4%	4.4%
Cycle/cyclist	0.0%	4.3%	3.0%	4.5%	4.8%	4.0%
Motor vehicle on road	55.6%	77.1%	83.1%	84.6%	85.2%	81.7%
Motor vehicle parked	0.0%	0.7%	1.1%	0.3%	1.0%	0.8%
Other object not fixed	11.1%	0.0%	0.3%	0.5%	0.0%	0.2%
Collision with fixed object						
Guardrail	0.0%	0.6%	0.4%	0.3%	0.1%	0.4%
Post/pole/support	0.0%	2.9%	1.9%	1.0%	0.4%	1.8%
Culvert/ditch	0.0%	1.3%	0.7%	0.8%	0.4%	0.9%
Embankment	0.0%	0.8%	0.4%	0.3%	0.4%	0.5%
Tree	22.2%	2.8%	1.4%	1.3%	0.3%	1.7%
Other fixed object	0.0%	1.9%	1.1%	0.6%	0.4%	1.2%
	0.2%	33.1%	33.8%	15.7%	17.2%	100.0%

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Non collision						
Rollover	22.2%	5.8%	4.8%	2.0%	2.4%	2.4%
Other non collision	0.0%	1.3%	0.6%	0.0%	0.0%	0.4%
Collision with object - not fixed						
Pedestrian	0.0%	6.0%	8.2%	8.0%	10.1%	3.8%
Cycle/cyclist	11.1%	1.3%	3.4%	5.3%	6.5%	1.6%
Motor vehicle on road	44.4%	61.4%	64.9%	68.1%	71.4%	32.9%
Motor vehicle parked	0.0%	2.1%	1.9%	2.3%	0.6%	1.0%
Other object not fixed	11.1%	0.5%	0.9%	2.3%	0.6%	0.5%
Collision with fixed object						
Guardrail	0.0%	0.9%	0.3%	1.0%	0.6%	0.4%
Post/pole/support	11.1%	5.7%	4.0%	3.7%	2.4%	2.3%
Culvert/ditch	0.0%	4.0%	3.1%	2.3%	2.4%	1.7%
Embankment	0.0%	1.9%	0.7%	0.7%	0.6%	0.6%
Tree	0.0%	4.8%	4.2%	3.0%	0.6%	2.0%
Other fixed object	0.0%	4.4%	3.1%	1.3%	1.8%	1.7%
	0.4%	42.9%	33.6%	14.8%	8.3%	100.0%

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

N = 6539

	DAY					
	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%	0.9%	0.9%	0.3%	1.1%
striking	50.0%	20.1%	15.2%	12.9%	12.1%	16.0%
struck	0.0%	2.1%	1.6%	2.7%	2.4%	2.1%
Multi vehicle crashes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
non collision	0.0%	0.2%	0.1%	0.2%	0.1%	0.2%
striking	10.0%	40.5%	40.6%	34.5%	35.9%	38.7%
struck	40.0%	31.7%	35.6%	43.4%	43.2%	36.8%
both	0.0%	3.7%	6.0%	5.5%	5.9%	5.1%
	0.2%	33.2%	33.8%	15.7%	17.1%	100.0%

	NIGHT					
	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	9.1%	2.6%	2.9%	0.3%	0.6%	1.2%
striking	54.5%	38.3%	31.0%	29.2%	28.7%	18.1%
struck	0.0%	0.6%	2.1%	1.9%	0.6%	0.7%
both	0.0%	0.0%	0.1%	0.3%	0.0%	0.0%
Multi vehicle crashes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
striking	18.2%	32.5%	32.1%	33.7%	28.7%	17.2%
struck	18.2%	22.5%	28.2%	32.4%	37.9%	14.5%
both	0.0%	3.4%	3.6%	2.2%	3.4%	1.7%
	0.5%	43.6%	33.5%	14.4%	8.0%	100.0%

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APPENDIX 1: GUIDE TO COLLAPSING OF VARIABLES FOR THE GES CASUALTY FILE (1989): SOUTHERN 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
- shrubbery 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
- shrubbery or bush
- boulder
- fixed object - no details

APPENDIX 2: FREQUENCY TABLES -GES SOUTH REGION (1989)

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GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MAXIMUM INJURY SEVERITY (CRASH LEVEL) BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Nonincapacitating injury	10	1278	1199	536	483	3506
Incapacitating injury	10	953	860	385	357	2565
Fatal injury	1	63	28	26	25	143
Unknown injury severity		4	9	3	5	21
Died prior		1				1
	21	2299	2096	950	870	6236

Missing cases = 303

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MAXIMUM INJURY SEVERITY (VEHICLE LEVEL) BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No injury	3	659	673	344	314	1993
Possible injury		128	152	74	68	422
Nonincapacitating injury	8	875	738	294	262	2177
Incapacitating injury	9	595	505	219	204	1532
Fatal injury	1	37	17	17	18	90
Injured - severity unknown		3	4		2	9
	21	2297	2089	948	868	6223

Missing cases = 316

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF VEHICLES INVOLVED BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
1	12	718	510	204	155	1599
2	9	1338	1295	606	592	3840
3		209	238	116	96	659
4		37	61	26	24	148
5		9	13	3	2	27
6		3	4		5	12
7		2	2	1		5
	21	2316	2123	956	874	6290

Missing cases = 249

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER INJURED IN CRASH BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured		18	27	6	4	55
1	13	1236	1146	547	453	3395
2	4	655	575	236	265	1735
3	2	240	221	101	102	666
4	2	103	93	49	31	278
5		34	30	11	14	89
6 or more	0	30	31	6	5	72
	21	2316	2123	956	874	6290

Missing cases = 249

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER INJURED IN VEHICLE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured	3	678	707	352	320	2060
1	11	1166	1076	461	431	3145
2	4	347	241	112	104	808
3	1	80	75	23	12	191
4 or more	2	45	24	8	7	86
	21	2316	2123	956	874	6290

Missing cases = 249

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF PERSONS INVOLVED BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
1	2	258	206	75	41	582
2	7	693	621	332	295	1948
3	5	474	422	195	219	1315
4	2	310	280	131	126	849
5	2	198	182	61	56	499
6	1	75	101	40	26	243
7		51	58	17	10	136
8 or more	1	55	51	25	23	155
	20	2114	1921	876	796	5727

Missing cases = 812

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DAY OF WEEK BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Sunday	2	323	239	95	92	751
Monday	2	278	269	137	138	824
Tuesday	3	267	283	132	122	807
Wednesday	1	301	281	128	117	828
Thursday	3	322	316	146	131	918
Friday	4	438	372	163	154	1131
Saturday	6	386	362	155	120	1029
	21	2315	2122	956	874	6288

Missing cases = 251

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
WEEKDAY VS WEEKEND BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Weekday	13	1606	1521	706	662	4508
Weekend	8	709	601	250	212	1780
	21	2315	2122	956	874	6288

Missing cases = 251

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TIME PERIOD BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
12 am - 6 am	5	270	169	59	19	522
6 am - 12 pm	0	407	475	223	241	1346
12 pm - 6 pm	10	951	906	420	459	2746
6 pm - 12 am	6	681	566	253	155	1661
	21	2309	2116	955	874	6275

Missing cases = 264

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TIME PERIOD BY WEEKDAY/WEEKEND BY AGE GROUP N=6539

WEEKDAY

	0-15	16-25	26-40	41-55	56-98	Total
12am - 6am	2	105	73	28	11	219
6 am - 12 pm		316	373	185	181	1055
12 pm - 6 pm	7	723	676	318	360	2084
6 pm - 12 am	4	457	393	175	110	1139
	13	1601	1515	706	662	4497

WEEKEND

	0-15	16-25	26-40	41-55	56-98	Total
12am - 6am	3	164	96	30	8	301
6 am - 12 pm		90	102	38	60	290
12 pm - 6 pm	3	228	230	102	99	662
6 pm - 12 am	2	225	172	79	45	523
	8	707	600	249	212	1776

Missing cases = 266

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
RURAL/URBAN BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Urban	5	653	756	321	251	1986
10% Rural	1	294	299	172	211	977
20% Rural	2	130	95	43	34	304
30% Rural	5	586	456	192	159	1398
40% Rural		88	63	28	26	205
50% Rural	2	85	90	36	43	256
70% Rural	5	381	260	126	125	897
90% Rural	1	99	104	38	25	267
	21	2316	2123	956	874	6290

Missing cases = 249

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
SPEED LIMIT IN MILES (AND KM/H) BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
0 (car-park, etc)		4	2	1	2	9
5 (8 km/h)		1	2		1	4
10 (17 km/h)		2	2	2		6
15 (24 km/h)	1	18	8	5	5	37
20 (32 km/h)	1	11	7	6	5	30
25 (40 km/h)	2	159	122	51	47	381
30 (48 km/h)	2	326	307	151	129	915
35 (56 km/h)	1	464	441	187	178	1271
40 (64 km/h)	3	248	236	110	106	703
45 (72 km/h)	5	376	347	179	171	1078
50 (80 km/h)		74	77	30	28	209
55 (89 km/h)	4	506	440	186	160	1296
60 (97 km/h)			2			2
65 (105 km/h)		22	24	14	5	65
	19	2211	2017	922	837	6006

Missing cases = 533

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
INTERSTATE HIGHWAY BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No (not on hwy)	21	2256	2055	922	861	6115
Yes (on hwy)		59	65	34	13	171
	21	2315	2120	956	874	6286

Missing cases = 253

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
LAND USE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Population 25000 - 50000		73	89	49	52	263
Population 50000 - 100000	3	281	232	85	96	697
Population 100000+	6	623	684	290	219	1822
Other Area	11	1152	951	470	445	3029
	20	2129	1956	894	812	5811

Missing cases = 728

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROADWAY ALIGNMENT BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Straight	18	1955	1845	835	786	5439
Curve	3	324	235	106	66	734
	21	2279	2080	941	852	6173

Missing cases = 366

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROADWAY PROFILE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Level	12	1317	1215	586	584	3714
Grade	5	503	411	187	136	1242
Hillcrest		68	47	18	11	144
Other		11	8	5	1	25
	17	1899	1681	796	732	5125

Missing cases = 1414

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFICWAY FLOW BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Two way undivided	20	1369	1145	512	465	3511
Divided highway	1	621	645	303	316	1886
Oneway		56	65	32	16	169
	21	2046	1855	847	797	5566

Missing cases = 973

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
RELATION TO ROADWAY BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
On roadway	10	1773	1791	840	809	5223
On shoulder/parking lane		35	34	15	8	92
Off roadway/shoulder/parking lane	11	495	283	97	56	942
On median		12	10	4		26
Other			1			1
	21	2315	2119	956	873	6284

Missing cases = 255

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
RELATION TO JUNCTION BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Non junction	11	1005	883	355	233	2487
Intersection	8	910	831	400	451	2600
Intersection related	2	162	177	92	95	528
Interchange area		3	6	3	1	13
Driveway/alley		203	173	87	84	547
Entrance/exit ramp		11	23	7	4	45
Railway crossing		4	6	4	2	16
Other		8	11	7	2	28
	21	2306	2110	955	872	6264

Missing cases = 275

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF TRAVEL LANES BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
1		19	22	9	12	62
2	14	1269	1014	456	413	3166
3	1	272	300	146	139	858
4	3	322	361	160	152	998
5	1	113	95	48	40	297
6		39	58	22	18	137
Seven or more		27	35	12	13	87
	19	2061	1885	853	787	5605

Missing cases = 934

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFIC CONTROL DEVICE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No controls	14	1350	1190	510	415	3479
Traffic signals:						
with pedestrian signal		2	2			4
pedestrian signal not known	2	448	471	229	230	1380
flashing traffic signal/beacon		23	26	16	9	74
other traffic signal		2	1	1		4
unknown traffic signal		1				1
Regulatory, school zone or warning signs:						
stop sign	3	301	249	121	143	817
yield sign		19	16	8	6	49
warning sign		12	7	6	2	27
other sign		7	4	4		15
manned crossing		10	7	5	2	24
Miscellaneous, not at railroad crossing		3	4	4	2	13
Traffic controls present - no details	1	38	44	13	14	110
Other traffic controls	1	69	66	34	45	215
	21	2285	2087	951	868	6212

Missing cases = 327

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFIC DEVICE FUNCTIONING BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No controls	14	1350	1190	510	415	3479
Device not functioning		5	6	4	2	17
Device functioning	6	872	824	411	420	2533
	20	2227	2020	925	837	6029

Missing cases = 510

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
SEX OF DRIVER BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Male	13	1304	1137	496	490	3440
Female	8	1011	984	460	383	2846
	21	2315	2121	956	873	6286

Missing cases = 253

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ALCOHOL USE (DRIVER) BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	2	185	179	58	19	443
No alcohol involved	18	2076	1910	886	843	5733
	20	2261	2089	944	862	6176

Missing cases = 363

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ALCOHOL INVOLVEMENT IN CRASH BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	3	265	253	90	45	656
No alcohol involved	18	2029	1850	856	823	5576
	21	2294	2103	946	868	6232

Missing cases = 307

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DRIVER PHYSICAL/MENTAL IMPAIRMENT BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
No impairment	18	2183	1991	907	838	5937
Drowsy/fatigued		39	29	7	1	76
Ill/blackout		5	2	9	2	18
Emotional			1			1
Drugs/medication			1			1
Illicit drugs		12	8	2	1	23
Wheelchair			1			1
Deaf		1		1	1	3
Hit-and-run vehicle	1	23	14	3	1	42
Physical/mental impairment - no details		8	9	8	6	31
Other physical/mental impairment	1	20	37	12	9	79
	20	2291	2093	949	859	6212

Missing cases = 327

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DRIVER'S ACTION BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Not avoiding/swerving	20	2194	2031	919	855	6019
Wind from passing truck				1		1
Slippery or loose surface		26	22	7	4	59
Blowout		2	1			3
Debris/object on road		3				3
Ruts/holes/bumps			2		1	3
Animals on road		6	5	1		12
Vehicle on road		26	12	9	1	48
Phantom vehicle		6	2	3		11
Ped/cyclist/non motorist		2	5	3	2	12
Water/snow/oil slick		4	4	2		10
Hit-and-run veh	1	22	14	3	1	41
Avoiding action - no details		14	14	5	3	36
Other cause		4		2	2	8
	21	2309	2112	955	869	6266

Missing cases = 273

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

GENERAL ESTIMATES SYSTEM (1989) - *SOUTHERN REGION
VIOLATIONS CHARGED BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
None	13	1516	1484	700	587	4300
Alcohol/drugs		87	95	36	7	225
Speeding	1	89	55	23	20	188
Alcohol or drugs and speeding		10	8	1	1	20
Reckless driving	1	50	22	9	6	88
Driving with suspended licence	1	29	23	2		55
Failure to giveway	1	163	129	70	135	498
Running traffic signal/stop sign		48	36	13	20	117
Other violation	4	320	267	99	96	786
	21	2312	2119	953	872	6277

Missing cases = 262

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER ON OCCUPANTS IN VEHICLE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
1	6	1182	1231	595	540	3554
2	7	610	409	194	206	1426
3	3	206	191	66	45	511
4	4	104	85	28	17	238
5		33	32	12	6	83
6		11	9	1	2	23
7		3	1			4
only injured reported		151	148	57	55	411
	20	2300	2106	953	871	6250

Missing cases = 289

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAVEL SPEED OF VEHICLE IN MILES (AND KM/H) BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
Stationary	1	170	232	133	97	633
01 - 12 (01 - 20 km/h)		184	157	90	140	571
13 - 24 (21 - 40 km/h)	2	247	224	107	137	717
25 - 35 (41 - 60 km/h)	2	248	238	145	113	746
36 - 50 (61 - 80 km/h)	2	311	239	99	74	725
51 - 60 (81 - 100 km/h)		125	72	33	17	247
Over 60 (>100 km/h)	3	72	38	11	5	129
	10	1357	1200	618	583	3768

Missing cases = 2771

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MODEL YEAR BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
1986 - 1989	6	727	729	353	255	2070
1981 - 1985	7	762	715	300	331	2115
1976 - 1980	4	591	487	214	204	1500
1971 - 1975	2	160	124	61	61	408
1974 and earlier		60	48	20	19	147
	19	2300	2103	948	870	6240

Missing cases = 299

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VEHICLE DEFECTS BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No vehicle defects	20	2222	2045	934	855	6076
Tyres		15	8	3	1	27
Brakes		10	10	5	1	26
Steering		4	2		1	7
Headlights		1				1
Other lights		2	3	1		6
Wheels			3			3
Trailer hitch			1			1
Hit-and-run vehicle	1	13	9	2		25
Vehicle defects - no details		3	1	1		5
Other vehicle defect		2	4		1	7
	21	2272	2086	946	859	6184

Missing cases = 355

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
LIGHT CONDITIONS BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Daylight	11	1412	1386	663	715	4187
Dark	4	413	300	109	62	888
Dark but lighted	4	378	318	134	62	896
Dawn		19	15	6	3	43
Dusk	2	63	69	32	22	188
	21	2285	2088	944	864	6202

Missing cases = 337

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ATMOSPHERIC CONDITIONS BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No adverse conditions	19	1901	1735	810	758	5223
Rain	2	352	318	121	98	891
Sleet		8	16	9	4	37
Snow		9	19	5	2	35
Fog		20	3	1	3	27
Other		6	10	1	2	19
	21	2296	2101	947	867	6232

Missing cases = 307

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VISUAL OBSTRUCTION BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No obstruction	20	2181	2048	913	837	5999
Precipitation		24	6	9	7	46
Glare/sun/headlights		11	3	1	5	20
Curve/hill/embankment		14	1	2	3	20
Building/billboard			3	1		4
Trees/crops/vegetation		9	6	3	1	19
Moving vehicle		9	10	8	3	30
Parked vehicle		22	14	12	4	52
Splash/spray from passing vehicle			1			1
Inadequate demister			2			2
Broken/dirty windscreen				1	2	3
Hit-and-run vehicle	1	21	14	3	1	40
Vision obscured - no details		6	1	1	4	12
Other obstruction		6	2		2	10
	21	2303	2111	954	869	6258

Missing cases = 281

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROAD SURFACE CONDITION BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Dry	18	1758	1612	756	707	4851
Wet	2	507	439	175	149	1272
Snow/slush		4	10	1	1	16
Ice		17	33	15	7	72
Other		8	3	1	4	16
	20	2294	2097	948	868	6227

Missing cases = 312

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VEHICLE MANOEUVRE BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Going straight	11	1384	1266	572	467	3700
Slowing/stopping	1	63	69	32	25	190
Starting in traffic		25	18	12	23	78
Stopped in traffic	1	169	230	133	97	630
Passing/overtaking	1	22	17	4	3	47
Leaving parking spot		1	1	2		4
Parked		1				1
Entering parking spot			2	1		3
Avoiding animal/pedestrian/object/vehicle		65	40	19	3	127
Turning right		48	61	22	39	170
Turning left	4	270	209	104	171	758
U-turn		10	6	3	9	28
Reversing		13	12	3	2	30
Changing lanes/merging		31	37	10	10	88
Negotiating curve	1	116	69	11	6	203
Other	2	80	73	26	14	195
	21	2298	2110	954	869	6252

Missing cases = 287

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MANNER OF COLLISION BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
No collision with moving vehicle	12	728	533	212	159	1644
Rear-end	2	466	520	240	203	1431
Head-on		124	109	43	33	309
Angle	7	949	913	442	467	2778
Sideswipe, same direction		21	17	9	5	52
Sideswipe, opposite direction		22	21	8	4	55
	21	2310	2113	954	871	6269

Missing cases = 270

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
FIRST HARMFUL EVENT (CRASH LEVEL) BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
Non collision:						
rollover	2	44	30	8	5	89
other non collision		29	21	10	1	61
Collision with object - not fixed:						
pedestrian		104	123	49	54	330
cycle or cyclist	1	68	65	44	47	225
motor vehicle on road	9	1586	1588	744	714	4641
motor vehicle parked		27	31	10	7	75
other object not fixed	2	6	12	9	1	30
Collision with fixed object:						
guardrail		22	10	5	3	40
post/pole/support	1	96	59	18	8	182
culvert/ditch	2	85	49	15	14	165
curb	1	23	14	5	1	44
embankment		51	21	6	4	82
fence		21	11	6	1	39
tree	3	91	54	16	4	168
other fixed object		60	33	11	9	113
	21	2313	2121	956	873	6284

Missing cases = 255

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MOST HARMFUL EVENT (VEHICLE LEVEL) BY AGE GROUP N=6539

	0-15	16-25	26-40	41-55	56-98	Total
Non collision:						
rollover	3	84	50	14	11	162
other non collision		28	12	3	2	45
Collision with object - not fixed:						
pedestrian		102	119	49	54	324
cycle/cyclist	1	67	64	44	44	220
motor vehicle on road	9	1555	1561	735	701	4561
parked motor vehicle		27	29	9	8	73
other object not fixed	2	4	10	10	1	27
Collision with fixed object:						
guardrail		16	7	5	2	30
post/pole/support	1	88	54	17	7	167
culvert/ditch		52	32	12	7	103
embankment		28	10	4	4	46
tree	2	79	48	17	3	149
other fixed object		63	36	8	6	113
	18	2193	2032	927	850	6020

Missing cases = 519

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VEHICLE ROLE BY AGE GROUP N = 6539

	0-15	16-25	26-40	41-55	56-98	Total
Single vehicle crashes						0
non collision	1	48	33	7	3	92
striking	11	634	439	173	134	1391
struck		34	37	23	18	112
both			1	1		2
Multi-vehicle crashes						0
non collision		3	2	1	1	7
striking	3	857	792	325	299	2276
struck	6	643	695	379	366	2089
both		83	108	42	47	280
	21	2302	2107	951	868	6249

Missing cases = 290

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

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

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GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MAXIMUM INJURY SEVERITY (CRASH LEVEL) BY AGE GROUP N = 6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Nonincapacitating injury	3	754	798	351	386	2292
Incapacitating injury	6	569	549	272	288	1684
Fatal injury	1	26	12	13	21	73
Unknown injury severity		3	6	2	3	14
	10	1352	1365	638	698	4063

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Nonincapacitating injury	7	519	396	185	97	1204
Incapacitating injury	4	382	310	112	69	877
Fatal injury		37	16	13	4	70
Unknown injury severity		1	3	1	2	7
Died prior		1				1
	11	940	725	311	172	2159

Missing cases = 317

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MAXIMUM INJURY SEVERITY (VEHICLE LEVEL) BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No injury		429	467	238	247	1381
Possible injury		80	108	54	65	307
Nonincapacitating injury	3	491	462	178	204	1338
Incapacitating injury	6	333	314	158	165	976
Fatal injury	1	15	7	8	15	46
Injured (severity unknown)		3	2		1	6
	10	1351	1360	636	697	4054

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No injury	3	229	205	106	67	610
Possible injury		47	44	20	3	114
Nonincapacitating injury	5	381	272	116	58	832
Incapacitating injury	3	260	190	60	39	552
Fatal injury		22	10	9	3	44
Injured (severity unknown)			2		1	3
	11	939	723	311	171	2155

Missing cases = 330

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF VEHICLES INVOLVED BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
1	5	323	243	105	103	779
2	5	854	887	434	492	2672
3		142	185	80	82	489
4		31	49	21	17	118
5		3	11	2	1	17
6		3	4		5	12
7		2	2	1		5
	10	1358	1381	643	700	4092

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
1	7	395	263	99	52	816
2	4	478	405	172	100	1159
3		66	53	35	14	168
4		6	12	5	7	30
5		6	2	1	1	10
	11	951	735	312	174	2183

Missing cases = 264

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER INJURED IN CRASH BY AGE GROUP N = 6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
No-one injured		6	16	5	2	29
1	6	738	737	367	354	2202
2	2	395	397	162	218	1174
3	2	139	134	66	87	428
4		51	64	32	22	169
5 or more		29	33	11	17	90
	10	1358	1381	643	700	4092

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
No-one injured		12	10	1	2	25
1	7	495	404	180	99	1185
2	2	257	177	74	47	557
3		100	87	34	15	236
4	2	52	29	17	9	109
5 or more		35	28	6	2	71
	11	951	735	312	174	2183

Missing cases = 264

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER INJURED IN VEHICLE BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured		436	488	245	250	1419
1	7	691	681	312	355	2046
2	2	182	159	65	81	489
3	1	26	40	15	8	90
4 or more		23	13	6	6	48
	10	1358	1381	643	700	4092

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No-one injured	3	241	217	107	70	638
1	4	469	391	149	76	1089
2	2	165	81	46	23	317
3		54	35	8	4	101
4 or more	2	22	11	2	1	38
	11	951	735	312	174	2183

Missing cases = 264

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF PERSONS INVOLVED IN CRASH BY AGE GROUP N = 6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
1	1	100	82	37	26	246
2	4	444	434	232	231	1345
3	3	292	280	128	184	887
4		199	185	100	106	590
5	1	117	127	42	45	332
6		42	64	22	21	149
7		27	35	10	10	82
8 or more	1	32	42	17	18	110
	10	1253	1249	588	641	3741

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
1	1	158	122	38	15	334
2	3	246	185	100	64	598
3	2	181	140	67	35	425
4	2	110	95	30	20	257
5	1	81	55	19	11	167
6	1	33	37	18	5	94
7		24	23	7		54
8 or more		23	9	8	5	45
	10	856	666	287	155	1974

Missing cases = 824

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DAY OF WEEK BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Sunday	2	137	134	56	74	403
Monday	1	184	195	106	122	608
Tuesday	1	184	200	97	100	582
Wednesday	1	195	198	86	98	578
Thursday	1	216	218	94	104	633
Friday	3	260	238	120	117	738
Saturday	1	181	198	84	85	549
	10	1357	1381	643	700	4091

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Sunday		186	105	39	18	348
Monday	1	92	74	31	16	214
Tuesday	2	83	82	35	22	224
Wednesday		106	81	42	19	248
Thursday	2	105	97	52	27	283
Friday	1	176	132	43	37	389
Saturday	5	203	163	70	35	476
	11	951	734	312	174	2182

Missing cases = 266

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
WEEKDAY VERSUS WEEKEND BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Weekday	7	1039	1049	503	541	3139
Weekend	3	318	332	140	159	952
	10	1357	1381	643	700	4091

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Weekday	6	562	466	203	121	1358
Weekend	5	389	268	109	53	824
	11	951	734	312	174	2182

Missing cases = 266

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TIME PERIOD BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
6 am - 12 pm		534	592	271	326	1723
12 pm - 6 pm	10	824	789	372	374	2369
	10	1358	1381	643	700	4092

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
6 pm - 12 am	6	681	566	253	155	1661
12 am - 6 am	5	270	169	59	19	522
	11	951	735	312	174	2183

Missing cases = 264

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TIME PERIOD BY WEEKDAY/WEEKEND BY AGE GROUP N=6539

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
Weekday:	6 am - 12 pm		316	373	185	181	1055
	12 pm - 6 pm	7	723	676	318	360	2084
Weekend:	6 am - 12 pm		90	102	38	60	290
	12 pm - 6 pm	3	228	230	102	99	662
		10	1357	1381	643	700	4091

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
Weekday:	12 am - 6 am	2	105	73	28	11	219
	6 pm - 12 am	4	457	393	175	110	1139
Weekend:	12 am - 6 am	3	164	96	30	8	301
	6 pm - 12 am	2	225	172	79	45	523
		11	951	734	312	174	2182

Missing cases = 266

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
RURAL/URBAN BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Urban	2	375	518	221	197	1313
10% Rural	1	178	194	114	168	655
20% Rural	1	62	44	31	26	164
30% Rural	2	352	293	122	128	897
40% Rural		46	33	9	19	107
50% Rural		44	48	20	35	147
70% Rural	3	239	180	96	106	624
90% Rural	1	62	71	30	21	185
	10	1358	1381	643	700	4092

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Urban	3	272	236	99	54	664
10% Rural		116	104	58	43	321
20% Rural	1	68	48	12	8	137
30% Rural	3	234	163	70	31	501
40% Rural		41	30	19	7	97
50% Rural	2	41	41	16	8	108
70% Rural	2	142	80	30	19	273
90% Rural		37	33	8	4	82
	11	951	735	312	174	2183

Missing cases = 264

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
SPEED LIMIT IN MILES (AND KM/H) BY AGE GROUP N = 6539

		DAY					
		0-15	16-25	26-40	41-55	56-98	Total
0	(car-park, etc)		4	2		2	8
5	(8 km/h)		1	1		1	3
10	(17 km/h)		1	2	2		5
15	(24 km/h)		15	8	4	4	31
20	(32 km/h)	1	6	3	4	4	18
25	(40 km/h)	2	96	80	36	42	256
30	(48 km/h)	1	198	199	103	102	603
35	(56 km/h)	1	279	291	124	145	840
40	(64 km/h)	1	136	158	70	82	447
45	(72 km/h)	1	216	233	113	136	699
50	(80 km/h))		49	59	22	21	151
55	(89 km/h)	3	284	270	133	127	817
65	(105 k/ph)		13	11	8	3	35
		10	1298	1317	619	669	3913

		NIGHT					
		0-15	16-25	26-40	41-55	56-98	Total
0	(car-park, etc)				1		1
5	(8 km/h)			1			1
10	(17 km/h)		1				1
15	(24 km/h)	1	3		1	1	6
20	(32 km/h)		5	4	2	1	12
25	(40 km/h)		62	42	15	5	124
30	(48 km/h)	1	127	106	48	27	309
35	(56 km/h)		185	149	63	33	430
40	(64 km/h)	2	109	78	40	24	253
45	(72 km/h)	4	158	112	65	35	374
50	(80 km/h))		25	18	8	7	58
55	(89 km/h)	1	222	170	53	33	479
60	(97 km/h)			2			2
65	(105 km/h)		9	13	6	2	30
		9	906	695	302	168	2080

Missing cases = 546

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
INTERSTATE HIGHWAY BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No (not highway)	10	1331	1349	626	690	4006
Yes (on highway)		27	32	17	10	86
	10	1358	1381	643	700	4092

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No (not highway)	11	919	699	296	171	2096
Yes (on highway)		31	33	16	3	83
	11	950	732	312	174	2179

Missing cases = 268

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

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

N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Population 25000 - 50000	0.0%	3.7%	4.5%	5.5%	6.7%	4.7%
Population 50000 - 100000	11.1%	13.9%	11.7%	8.9%	11.5%	11.9%
Population 100000+	22.2%	28.3%	36.3%	34.6%	27.9%	31.9%
Other Area	66.7%	54.2%	47.6%	51.0%	53.9%	51.4%
	0.2%	33.0%	33.6%	15.9%	17.3%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Population 25000 - 50000	0.0%	3.1%	4.7%	5.5%	5.1%	2.2%
Population 50000 - 100000	18.2%	12.3%	12.1%	10.7%	13.4%	6.4%
Population 100000+	36.4%	30.7%	32.4%	28.0%	22.9%	16.0%
Other Area	45.5%	54.0%	50.7%	55.7%	58.6%	28.2%
	0.5%	43.5%	33.7%	14.4%	7.8%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROADWAY ALIGNMENT BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Straight	8	1169	1232	562	635	3606
Curve	2	167	128	71	49	417
	10	1336	1360	633	684	4023

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Straight	10	779	609	272	151	1821
Curve	1	157	106	35	17	316
	11	936	715	307	168	2137

Missing cases = 379

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROADWAY PROFILE BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Level	7	777	813	408	471	2476
Grade	2	306	264	127	114	813
Hillcrest		42	35	12	8	97
Other		7	4	2	1	14
	9	1132	1116	549	594	3400

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Level	5	536	401	177	113	1232
Grade	3	195	144	60	22	424
Hillcrest		26	12	6	3	47
Other		4	4	3		11
	8	761	561	246	138	1714

Missing cases = 1425

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFICWAY FLOW BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Two way undivided	10	810	745	341	383	2289
Divided highway		370	422	210	246	1248
Oneway		32	54	20	12	118
	10	1212	1221	571	641	3655

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Two way undivided	10	558	396	171	82	1217
Divided highway	1	247	222	92	70	632
Oneway		24	11	12	4	51
	11	829	629	275	156	1900

Missing cases = 984

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
RELATION TO ROADWAY BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
On roadway	5	1144	1236	582	660	3627
On shoulder/parking lane		17	12	6	7	42
Off roadway/shoulder/parking lane	5	193	128	51	32	409
On median		4	3	4		11
Other			1			1
	10	1358	1380	643	699	4090

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
On roadway	5	622	551	257	149	1584
On shoulder/parking lane		18	21	9	1	49
Off roadway/shoulder/parking lane	6	302	153	46	24	531
On median		8	7			15
	11	950	732	312	174	2179

Missing cases = 270

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
RELATION TO JUNCTION BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Non junction	5	525	525	216	178	1449
Intersection	3	573	563	288	367	1794
Intersection related	2	101	133	65	73	374
Interchange area		1	4	1	1	7
Driveway/alley		141	122	61	76	400
Entrance/exit ramp		4	20	5	1	30
Railway crossing		2	2	1	1	6
Other		6	6	5	1	18
	10	1353	1375	642	698	4078

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Non junction	6	477	355	138	55	1031
Intersection	5	334	267	112	84	802
Intersection related		60	42	27	22	151
Interchange area		2	2	2		6
Driveway/alley		62	51	26	8	147
Entrance/exit ramp		7	3	2	3	15
Railway crossing		2	4	3	1	10
Other		2	5	2	1	10
	11	946	729	312	174	2172

Missing cases = 289

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF TRAVEL LANES BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
1		13	17	6	9	45
2	8	752	646	306	332	2044
3	1	154	210	93	106	564
4	1	192	244	123	125	685
5		68	59	30	33	190
6		20	36	13	15	84
7 or more lanes		19	28	7	12	66
	10	1218	1240	578	632	3678

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
1		6	5	3	3	17
2	6	515	366	150	81	1118
3		117	89	52	33	291
4	2	128	116	37	27	310
5	1	45	36	18	7	107
6		19	22	9	3	53
7 or more lanes		8	7	5	1	21
	9	838	641	274	155	1917

Missing cases = 944

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFIC CONTROL DEVICE BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
No controls	7	778	749	341	327	2202
Traffic signals:						
with pedestrian signal		1	2			3
pedestrian signal not known	1	257	323	157	179	917
flashing traffic signal/beacon		10	10	11	7	38
other traffic signal			1			1
Regulatory, school zone or warning signs:						
stop sign	1	212	178	85	123	599
yield sign		10	9	6	5	30
warning sign		3	6	5	2	16
other sign		3	3	2		8
manned crossing		6	6	3	2	17
active devices		3	1	2	1	7
Traffic control present - no details	1	21	29	10	10	71
Other traffic control		38	45	20	40	143
	10	1342	1362	642	696	4052

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
No controls	7	569	438	168	88	1270
Traffic signals:						
with pedestrian signal		1				1
pedestrian signal not known	1	188	147	72	51	459
flashing traffic signal/beacon		13	16	5	2	36
other traffic signal		2		1		3
unknown traffic signal		1				1
Regulatory, school zone or warning signs:						
stop sign	2	89	71	36	20	218
yield sign		9	6	2	1	18
warning sign		9	1	1		11
other sign		4	4	4	1	13
manned crossing		4	1	2		7
Traffic control present - no details		17	15	3	4	39
Other traffic control	1	31	21	14	5	72
	11	937	720	308	172	2148

Missing cases = 339

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAFFIC DEVICE FUNCTIONING BY AGE GROUP N-6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
No controls	7	778	749	341	327	2202
Device not functioning		4	1	2	1	8
Device functioning	2	534	569	282	342	1729
	9	1316	1319	625	670	3939

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
No controls	7	569	438	168	88	1270
Device not functioning		1	5	2	1	9
Device functioning	4	335	253	129	78	799
	11	905	696	299	167	2078

Missing cases = 522

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
SEX OF DRIVER BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Male	5	702	664	308	388	2067
Female	5	656	715	335	311	2022
	10	1358	1379	643	699	4089

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Male	8	599	468	188	102	1365
Female	3	351	267	124	72	817
	11	950	735	312	174	2182

Missing cases = 268

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ALCOHOL USE (DRIVER) BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved		34	45	23	6	108
No alcohol involved	10	1300	1317	615	686	3928
	10	1334	1362	638	692	4036

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	2	151	134	35	13	335
No alcohol involved	8	769	587	270	157	1791
	10	920	721	305	170	2126

Missing cases = 377

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ALCOHOL INVOLVEMENT IN CRASH BY AGE GROUP N = 6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved		62	65	30	11	168
No alcohol involved	10	1290	1305	609	685	3899
	10	1352	1370	639	696	4067

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Alcohol involved	3	203	188	60	34	488
No alcohol involved	8	732	539	246	138	1663
	11	935	727	306	172	2151

Missing cases = 321

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DRIVER PHYSICAL/MENTAL IMPAIRMENT BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No impairment	9	1310	1329	621	670	3939
Drowsy/fatigued		16	14	2	1	33
Ill / blackout		3	2	8	1	14
Drugs/medication			1			1
Illicit drugs		3	3		1	7
Deaf				1	1	2
Hit-and-run vehicle		6	7		1	14
Physical/mental impairment - no details		3	3	7	6	19
Other physical/mental impairment		4	8	3	7	22
	9	1345	1367	642	688	4051

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No impairment	9	866	655	285	168	1983
Drowsy/fatigued		23	15	5		43
Ill / blackout		2		1	1	4
Emotional			1			1
Illicit drugs		9	5	2		16
Wheelchair			1			1
Deaf		1				1
Hit-and-run vehicle	1	17	7	3		28
Physical/mental impairment - no details		5	6	1		12
Other physical/mental impairment	1	16	29	9	2	57
	11	939	719	306	171	2146

Missing cases = 342

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
DRIVER'S ACTION BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Not avoiding/swerving	10	1305	1331	630	686	3962
Slippery or loose surface		14	16	3	3	36
Blowout		1	1			2
Animals on road				1		1
Vehicle on road		13	9	6	1	29
Phantom vehicle		4				4
Ped/cyclist/non motorist		1	1		1	3
Water/snow/oil slick		3	2	1		6
Hit-and-run vehicle		6	7		1	14
Avoiding action - no details		8	12		2	22
Other cause				1	1	2
	10	1355	1379	642	695	4081

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Not avoiding/swerving	10	883	693	289	169	2044
Wind from passing truck				1		1
Slippery or loose surface		12	6	4	1	23
Blowout		1				1
Debris/object on road		3				3
Ruts/holes/bumps			2		1	3
Animals on road		6	5			11
Vehicle on road		13	3	3		19
Phantom vehicle		2	2	3		7
Ped/cyclist/non motorist		1	4	3	1	9
Water/snow/oil slick		1	2	1		4
Hit-and-run vehicle	1	16	7	3		27
Avoiding action - no details		6	2	5	1	14
Other cause		3			1	4
	11	947	726	312	174	2170

Missing cases = 288

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VIOLATIONS CHARGED BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
None	8	899	991	481	466	2845
Alcohol/drugs		19	24	13	2	58
Speeding		52	43	18	16	129
Alcohol or drugs and speeding		2	2		1	5
Reckless driving	1	21	11	4	3	40
Driving with suspended licence		16	15	1		32
Failure to giveway		116	87	48	110	361
Running traffic controls/stop sign		24	26	10	18	78
Other violation	1	208	181	66	83	539
	10	1357	1380	641	699	4087

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
None	5	611	489	218	121	1444
Alcohol/drugs		68	71	23	5	167
Speeding	1	37	12	5	4	59
Alcohol or drugs and speeding		8	6	1		15
Reckless driving		29	11	5	3	48
Driving with suspended licence	1	13	8	1		23
Failure to giveway	1	47	41	22	25	136
Running traffic controls/stop sign		24	10	3	2	39
Other violation	3	111	84	33	13	244
	11	948	732	311	173	2175

Missing cases = 277

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
NUMBER OF OCCUPANTS IN VEHICLE BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
1	3	743	801	413	430	2390
2	5	341	263	115	168	892
3	1	106	130	45	37	319
4	1	55	58	17	13	144
5 or more		25	19	11	6	61
only injured reported		83	106	40	45	274
	10	1353	1377	641	699	4080

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
1	3	435	426	182	110	1156
2	2	267	145	78	38	530
3	2	100	60	21	8	191
4	3	49	27	11	4	94
5 or more		22	23	2	2	49
only injured reported		67	41	17	10	135
	10	940	722	311	172	2155

Missing cases = 304

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
TRAVEL SPEED OF VEHICLE IN MILES (AND KM/H) BY AGE GROUP N = 6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Stationary	1	121	185	105	75	487
01 - 12 (01 - 20 km/h)		141	127	69	115	452
13 - 24 (21 - 40 km/h)	1	156	168	75	114	514
25 - 35 (41 - 60 km/h)	1	155	158	96	95	505
36 - 50 (61 - 80 km/h)	1	172	157	60	60	450
51 - 60 (81 - 100 km/h)		61	38	23	9	131
Over 60 (>100 km/h)	1	27	15	7	4	54
	5	833	848	435	472	2593

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Stationary		49	47	28	22	146
01 - 12 (01 - 20 km/h)		42	30	21	25	118
13 - 24 (21 - 40 km/h)	1	90	56	32	23	202
25 - 35 (41 - 60 km/h)	1	93	80	49	18	241
36 - 50 (61 - 80 km/h)	1	137	81	38	14	271
51 - 60 (81 - 100 km/h)		64	34	10	8	116
Over 60 (>100 km/h)	2	45	23	4	1	75
	5	520	351	182	111	1169

Missing cases = 2777

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MODEL YEAR BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
1986 - 1989	3	436	478	248	209	1374
1981 - 1985	4	443	484	207	265	1403
1976 - 1980	1	339	303	140	157	940
1971 - 1975	1	97	71	35	48	252
1974 and earlier		32	30	8	17	87
	9	1347	1366	638	696	4056

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
1986 - 1989	3	288	249	104	46	690
1981 - 1985	3	316	227	93	66	705
1976 - 1980	3	251	184	74	47	559
1971 - 1975	1	63	53	26	13	156
1974 and earlier		28	17	12	2	59
	10	946	730	309	174	2169

Missing cases = 314

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VEHICLE DEFECTS BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
No vehicle defects	10	1305	1332	633	682	3962
Tyres		9	7	1	1	18
Brakes		9	9	4	1	23
Steering		3	2		1	6
Headlights		1				1
Other lights (on vehicle)			1			1
Wheels			1			1
Trailer hitch			1			1
Hit-and-run vehicle		4	5			9
Vehicle defects - no details		2				2
Other vehicle defect			1		1	2
	10	1333	1359	638	686	4026

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
No vehicle defects	10	910	707	300	173	2100
Tyres		6	1	2		9
Brakes		1	1	1		3
Steering		1				1
Other lights (on vehicle)		2	2	1		5
Wheels			2			2
Hit-and-run vehicle	1	9	4	2		16
Vehicle defects - no details		1	1	1		3
Other vehicle defect		2	3			5
	11	932	721	307	173	2144

Missing cases = 369

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
LIGHT CONDITIONS BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
Daylight	90.0%	94.7%	92.9%	94.2%	96.4%	94.3%
Dark	0.0%	1.0%	1.5%	1.9%	1.1%	1.4%
Dark but lighted	0.0%	1.3%	2.3%	1.9%	0.7%	1.6%
Dawn	0.0%	1.0%	0.9%	0.6%	0.4%	0.8%
Dusk	10.0%	1.9%	2.3%	1.4%	1.3%	1.8%
	0.2%	33.2%	33.7%	15.7%	17.1%	100.0%

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
Daylight	18.2%	13.9%	15.4%	19.7%	26.2%	8.5%
Dark	36.4%	42.8%	39.0%	31.9%	32.1%	20.4%
Dark but lighted	36.4%	38.6%	39.9%	40.1%	33.9%	20.3%
Dawn	0.0%	0.5%	0.3%	0.7%	0.0%	0.2%
Dusk	9.1%	4.1%	5.3%	7.6%	7.7%	2.8%
	0.5%	43.7%	33.5%	14.3%	7.9%	100.0%

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ATMOSPHERIC CONDITION BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No adverse conditions	10	1137	1125	552	609	3433
Rain		199	216	79	83	577
Sleet		3	12	5	3	23
Snow		6	12	4	1	23
Fog		1			1	2
Other		2	6		1	9
	10	1348	1371	640	698	4067

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No adverse conditions	9	758	606	257	149	1779
Rain	2	153	102	42	15	314
Sleet		5	4	4	1	14
Snow		2	5	1	1	9
Fog		19	3	1	2	25
Other		4	4	1	1	10
	11	941	724	306	169	2151

Missing cases = 321

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VISUAL OBSTRUCTION BY AGE GROUP N=6539

DAY

	0-15	16-25	26-40	41-55	56-98	Total
No obstruction	10	1288	1332	613	670	3913
Precipitation		5	4	5	4	18
Glare/sun/headlights		8	3		2	13
Curve/hill/embankment		9		2	3	14
Building/billboard			2	1		3
Trees/crops/vegetation		6	5	3	1	15
Moving vehicle		6	10	5	3	24
Parked vehicle		19	11	11	4	45
Splash/spray from passing vehicle			1			1
Inadequate demister			2			2
Broken/dirty windscreen				1	2	3
Hit-and-run vehicle		5	7		1	13
Vision obscured - no details		2		1	4	7
Other obstruction		4			1	5
	10	1352	1377	642	695	4076

NIGHT

	0-15	16-25	26-40	41-55	56-98	Total
No obstruction	10	886	709	299	167	2071
Precipitation		19	2	4	3	28
Glare/sun/headlights		3		1	3	7
Curve/hill/embankment		5	1			6
Building/billboard			1			1
Trees/crops/vegetation		3	1			4
Moving vehicle		3		3		6
Parked vehicle		3	3	1		7
Hit-and-run vehicle	1	16	7	3		27
Vision obscured - no details		4	1			5
Other obstruction		2	2		1	5
	11	944	727	311	174	2167

Missing cases = 296

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
ROAD SURFACE CONDITION BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Dry	10	1049	1039	514	572	3184
Wet		282	291	117	117	807
Snow/slush		3	7	1		11
Ice		11	27	8	6	52
Other		1	3		2	6
	10	1346	1367	640	697	4060

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Dry	8	703	569	241	135	1656
Wet	2	224	146	58	32	462
Snow/slush		1	3		1	5
Ice		6	6	7	1	20
Other		7		1	2	10
	10	941	724	307	171	2153

Missing cases = 326

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VEHICLE MANOEUVRE BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Going straight	3	795	807	369	370	2344
Slowing/stopping	1	36	56	24	24	141
Starting in traffic lane		17	12	9	22	60
Stopped in traffic lane	1	120	183	105	75	484
Passing/overtaking		10	7	2	3	22
Leaving parking spot			1	2		3
Parked		1				1
Entering parking spot			1	1		2
Avoiding animal/ped/object/vehicle		32	23	7	2	64
Turning right		31	44	15	32	122
Turning left	3	175	135	74	141	528
U-turn		4	4	2	6	16
Reversing		9	11	3	2	25
Changing lanes/merging		19	21	7	7	54
Negotiating curve	1	50	31	7	4	93
Other	1	50	41	14	8	114
	10	1349	1377	641	696	4073

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Going straight	8	584	454	202	97	1345
Slowing/stopping		27	12	8	1	48
Starting in traffic lane		8	6	3	1	18
Stopped in traffic lane		49	47	28	22	146
Passing/overtaking	1	12	10	2		25
Leaving parking spot		1				1
Entering parking spot			1			1
Avoiding animal/ped/object/vehicle		33	17	12	1	63
Turning right		17	17	7	7	48
Turning left	1	94	74	30	30	229
U-turn		6	2	1	3	12
Reversing		4	1			5
Changing lanes/merging		12	16	3	3	34
Negotiating curve		66	37	4	2	109
Other	1	30	32	12	6	81
	11	943	726	312	173	2165

Missing cases = 301

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MANNER OF COLLISION BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
No collision with moving vehicle	5	327	255	109	107	803
Rear end	2	315	395	191	171	1074
Head on		75	67	30	22	194
Angle	3	611	633	301	388	1936
Sideswipe, same direction		12	13	5	5	35
Sideswipe, opposite direction		15	15	7	4	41
	10	1355	1378	643	697	4083

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
No collision with moving vehicle	7	401	274	103	52	837
Rear end		148	123	49	32	352
Head on		49	42	13	11	115
Angle	4	334	280	140	79	837
Sideswipe, same direction		9	4	4		17
Sideswipe, opposite direction		7	6	1		14
	11	948	729	310	174	2172

Missing cases = 284

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
FIRST HARMFUL EVENT (CRASH LEVEL) BY AGE GROUP N = 6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Non collision:						
rollover		18	11	6	3	38
other non collision		18	13	7	1	39
Collision with object - not fixed:						
pedestrian		51	66	25	37	179
cycle or cyclist		57	41	28	36	162
motor vehicle on road	5	1030	1126	534	592	3287
motor vehicle parked		9	14	2	6	31
other object not fixed	1	1	3	2		7
Collision with fixed object:						
guardrail		9	5	2	1	17
post/pole/support		37	26	9	3	75
culvert/ditch	1	28	18	7	7	61
curb	1	9	4	1	1	16
embankment		21	11	3	3	38
fence		6	5	5	1	17
tree	2	42	21	7	2	74
other fixed object		21	16	5	6	48
	10	1357	1380	643	699	4089

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Non collision:						
rollover	2	26	19	2	2	51
other non collision		11	8	3		22
Collision with object - not fixed:						
pedestrian		53	57	24	17	151
cycle or cyclist	1	11	23	16	11	62
motor vehicle on road	4	549	459	209	122	1343
motor vehicle parked		18	16	8	1	43
other object not fixed	1	5	9	7	1	23
Collision with fixed object:						
guardrail		13	5	3	2	23
post/pole/support	1	59	32	9	5	106
culvert/ditch	1	57	30	8	7	103
curb		14	10	4		28
embankment		30	10	3	1	44
fence		15	6	1		22
tree	1	49	33	9	2	94
other fixed object		39	17	6	3	65
	11	949	734	312	174	2180

Missing cases = 270

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
MOST HARMFUL EVENT (VEHICLE LEVEL) BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Non collision:						
rollover	1	33	17	8	7	66
other non collision		17	8	3	2	30
Collision with object - *not* fixed:						
pedestrian		50	63	25	37	175
cycle or cyclist		56	40	28	33	157
motor vehicle on road	5	1014	1115	529	581	3244
motor vehicle parked		9	15	2	7	33
other object not fixed	1		4	3		8
Collision with fixed object:						
guardrail		8	5	2	1	16
post/pole/support		38	26	6	3	73
culvert/ditch		17	10	5	3	35
embankment		11	5	2	3	21
tree	2	37	19	8	2	68
other fixed object		25	15	4	3	47
	9	1315	1342	625	682	3973

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Non collision:						
rollover	2	51	33	6	4	96
other non collision		11	4			15
Collision with object - not fixed:						
pedestrian		52	56	24	17	149
cycle or cyclist	1	11	23	16	11	62
motor vehicle on road	4	535	443	205	120	1307
motor vehicle parked		18	13	7	1	39
other object not fixed	1	4	6	7	1	19
Collision with fixed object:						
guardrail		8	2	3	1	14
post/pole/support	1	50	27	11	4	93
culvert/ditch		35	21	7	4	67
embankment		17	5	2	1	25
tree		42	29	9	1	81
other fixed object		38	21	4	3	66
	9	872	683	301	168	2033

Missing cases = 533

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

GENERAL ESTIMATES SYSTEM (1989) - SOUTHERN REGION*
VEHICLE ROLE BY AGE GROUP N=6539

	DAY					
	0-15	16-25	26-40	41-55	56-98	Total
Single vehicle crashes:						0
non collision		23	12	6	2	43
striking	5	271	209	82	84	651
struck		28	22	17	17	84
Multi vehicle crashes:						0
non collision		3	2	1	1	7
striking	1	546	557	220	249	1573
struck	4	427	488	277	300	1496
both		50	82	35	41	208
	10	1348	1372	638	694	4062

	NIGHT					
	0-15	16-25	26-40	41-55	56-98	Total
Single vehicle crashes:						0
non collision	1	25	21	1	1	49
striking	6	363	226	91	50	736
struck		6	15	6	1	28
Multi vehicle crashes:			1	1		2
non collision						0
striking	2	308	234	105	50	699
struck	2	213	205	101	66	587
both		32	26	7	6	71
	11	947	728	312	174	2172

Missing cases =305

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