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| 16. Abstract Motorcycle rider fatalities decreased each year from 1995 to 1997, reaching a historic low of 2,116 in 1997. Beginning in 1998 motorcycle rider fatalities started to increase each year. Since 1997 motorcycle rider fatalities have increased by 89 percent. NHTSA released a comprehensive report in 2001 based on increases in motorcycle rider fatalities for two consecutive years (1998 and 1999). The latest 2004 data show that motorcycle rider fatalities increased for the seventh year in a row since 1997. This report is an update to the 2001 report and was written to provide insight and update into the continued increasing trend in motorcycle rider fatalities in the recent years. The analysis was based on 1995-2004 data from the Fatality Analysis Reporting System (FARS) along with data from Motorcycle Industry Council (MIC), Federal Highway Administration (FHWA), and the United States Census Bureau. | | | | | |
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TABLE OF CONTENTS

| | |
|--|-----------|
| 1. EXECUTIVE SUMMARY | 1 |
| 1.1. PURPOSE | 1 |
| 1.2. FINDINGS..... | 2 |
| 2. INTRODUCTION..... | 3 |
| 3. ANALYTICAL APPROACH AND DATA SOURCES | 4 |
| 3.1. ANALYTICAL APPROACH | 4 |
| 3.2. DATA SOURCES..... | 4 |
| 4. DATA ANALYSIS..... | 4 |
| 4.1. SUMMARY DATA..... | 4 |
| 4.2. TRENDS | 11 |
| 4.3. COMMON CRASH CHARACTERISTICS..... | 37 |
| 5. FINDINGS..... | 45 |
| 5.1 EXPOSURE..... | 45 |
| 5.2 TRENDS | 45 |
| 5.3 COMMON CRASH CHARACTERISTICS..... | 46 |
| 6. APPENDIX A: ADDITIONAL DATA | 48 |
| 7. APPENDIX B: DATA SOURCES..... | 60 |
| 7.1 FATALITY ANALYSIS REPORTING SYSTEM (FARS) | 60 |
| 7.2 MOTORCYCLE INDUSTRY COUNCIL (MIC)..... | 60 |
| 7.3 FEDERAL HIGHWAY ADMINISTRATION (FHWA)..... | 61 |
| 7.4 U.S. CENSUS BUREAU..... | 61 |
| 8. REFERENCES..... | 62 |

LIST OF DATA TABLES

| | |
|--|----|
| TABLE 1: FATALITIES FROM MOTOR VEHICLE CRASHES BY YEAR AND PERSON TYPE..... | 5 |
| TABLE 2: ON-HIGHWAY MOTORCYCLES BY ENGINE DISPLACEMENT IN CC..... | 6 |
| TABLE 3: NEW ON-HIGHWAY MOTORCYCLE UNITS SOLD BY YEAR AND PERCENT AND CUMULATIVE INCREASES..... | 7 |
| TABLE 4: OWNERSHIP OF MOTORCYCLES BY AGE GROUP..... | 8 |
| TABLE 5: MOTORCYCLE REGISTRATIONS AND VEHICLE MILES TRAVELED (VMT) BY YEAR ... | 9 |
| TABLE 6: ESTIMATE OF U.S. RESIDENT POPULATION (100,000) BY YEAR AND AGE GROUP..... | 10 |
| TABLE 7: MOTORCYCLE RIDER FATALITIES AND FATALITY RATES BY YEAR AND PER REGISTERED VEHICLE AND VEHICLE MILES OF TRAVEL..... | 12 |
| TABLE 8: MOTORCYCLE RIDER FATALITIES BY YEAR AND PERSON TYPE..... | 13 |
| TABLE 9: MOTORCYCLE RIDER FATALITIES BY YEAR AND SEX..... | 14 |
| TABLE 10: MOTORCYCLE RIDER FATALITIES BY YEAR AND AGE GROUP..... | 15 |
| TABLE 11: MOTORCYCLE RIDER FATALITIES AS PERCENT BY YEAR AND AGE GROUP..... | 17 |
| TABLE 12: MOTORCYCLE RIDER FATALITIES BY YEAR AND ENGINE DISPLACEMENT..... | 18 |
| TABLE 13: MOTORCYCLE RIDER FATALITIES IN 1,001-1,500 CC ENGINE SIZE BY YEAR AND AGE GROUP..... | 20 |
| TABLE 14: MEAN AGE OF MOTORCYCLE RIDER FATALITIES AND MEAN ENGINE DISPLACEMENT IN CC INVOLVED IN FATAL CRASH BY YEAR..... | 21 |
| TABLE 15: MOTORCYCLE RIDER FATALITIES BY YEAR AND DAY OF WEEK..... | 23 |
| TABLE 16: MOTORCYCLE RIDER FATALITIES BY YEAR AND LAND USE..... | 24 |
| TABLE 17: MOTORCYCLE RIDER FATALITIES BY YEAR AND CRASH TYPE..... | 25 |
| TABLE 18: FATALLY INJURED MOTORCYCLE RIDERS BY YEAR AND HELMET USE..... | 26 |
| TABLE 19: FATALLY INJURED MOTORCYCLE RIDERS IN STATES WITH/WITHOUT UNIVERSAL HELMET LAWS..... | 27 |
| TABLE 20: MOTORCYCLE RIDER FATALITIES BY YEAR AND ROADWAY TYPE..... | 28 |
| TABLE 21: MOTORCYCLE RIDER FATALITIES BY YEAR AND SPEEDING FACTOR..... | 30 |
| TABLE 22: MOTORCYCLE OPERATOR FATALITIES BY YEAR AND OPERATOR BAC..... | 31 |
| TABLE 23: MOTORCYCLE OPERATORS KILLED BY YEAR, LICENSE STATUS, AND LICENSE COMPLIANCE..... | 33 |
| TABLE 24: MOTORCYCLE RIDER FATALITY RATES BY REGISTERED MOTORCYCLES, VEHICLE MILES OF TRAVEL, AND YEAR..... | 34 |
| TABLE 25: MOTORCYCLE RIDER FATALITY RATE BY AGE GROUP PER 100,000 U.S. RESIDENT POPULATION AND YEAR..... | 36 |
| TABLE 26: MOTORCYCLE OPERATOR FATALITIES IN 2004 BY AGE GROUP AND ALCOHOL LEVEL..... | 48 |

| | |
|---|-----------|
| TABLE 27: MOTORCYCLE OPERATOR FATALITIES IN 2004 BY ENGINE SIZE AND ALCOHOL LEVEL | 48 |
| TABLE 28: MOTORCYCLE RIDER FATALITIES IN 2004 BY AGE GROUP AND DAY OF WEEK | 49 |
| TABLE 29: MOTORCYCLE RIDER FATALITIES IN 2004 BY ENGINE SIZE AND DAY OF WEEK..... | 49 |
| TABLE 30: MOTORCYCLE RIDER FATALITIES BY AGE GROUP AND LAND USE IN 2004..... | 50 |
| TABLE 31: MOTORCYCLE RIDER FATALITIES BY ENGINE SIZE AND LAND USE IN 2004..... | 50 |
| TABLE 32: MOTORCYCLE RIDER FATALITIES IN 2004 BY AGE GROUP AND CRASH TYPE | 51 |
| TABLE 33: MOTORCYCLE RIDER FATALITIES IN 2004 BY ENGINE SIZE AND CRASH TYPE | 51 |
| TABLE 34: FATALLY INJURED MOTORCYCLE RIDERS IN 2004 BY AGE GROUP AND HELMET USE | 52 |
| TABLE 35: FATALLY INJURED MOTORCYCLE RIDERS IN 2004 BY ENGINE SIZE AND HELMET USE | 52 |
| TABLE 36: MOTORCYCLE RIDER FATALITIES IN 2004 BY AGE GROUP AND ROADWAY FUNCTION CLASS | 53 |
| TABLE 37: MOTORCYCLE RIDER FATALITIES IN 2004 BY ENGINE SIZE AND ROADWAY FUNCTION CLASS | 53 |
| TABLE 38: MOTORCYCLE RIDER FATALITIES IN 2004 BY AGE GROUP AND SPEEDING | 54 |
| TABLE 39: MOTORCYCLE RIDER FATALITIES IN 2004 BY ENGINE SIZE AND SPEEDING..... | 54 |
| TABLE 40: MOTORCYCLE OPERATOR FATALITIES IN 2004 BY AGE GROUP, LICENSE STATUS, AND LICENSE COMPLIANCE..... | 55 |
| TABLE 41: MOTORCYCLE OPERATOR FATALITIES IN 2004 BY ENGINE SIZE, LICENSE STATUS, AND LICENSE COMPLIANCE..... | 55 |

TABLE OF FIGURES

| | |
|--|----|
| CHART 1: ENGINE SIZE PERCENTAGE BY YEAR | 6 |
| CHART 2: MOTORCYCLE OWNERSHIP PERCENTAGE BY AGE GROUP AND YEAR | 8 |
| CHART 3: REGISTERED MOTORCYCLES AND VMT BY YEAR | 9 |
| CHART 4: U.S. RESIDENT POPULATION BY AGE GROUP AND YEAR..... | 11 |
| CHART 5: MOTORCYCLE RIDER FATALITIES BY YEAR | 12 |
| CHART 6: MOTORCYCLE RIDER FATALITIES BY PERSON TYPE AND YEAR | 14 |
| CHART 7: MOTORCYCLE RIDER FATALITIES BY AGE GROUP AND YEAR | 16 |
| CHART 8: MOTORCYCLE RIDER FATALITY PERCENTAGE BY YEAR AND AGE GROUP | 17 |
| CHART 9: MOTORCYCLE RIDER FATALITIES BY YEAR AND ENGINE DISPLACEMENT CC..... | 19 |
| CHART 10: MOTORCYCLE RIDER FATALITIES IN 1,001-1,500 CC ENGINE SIZE BY YEAR AND AGE GROUP | 20 |
| CHART 11: MEAN AGE OF MOTORCYCLE RIDER FATALITY BY YEAR | 22 |
| CHART 12: MEAN ENGINE DISPLACEMENT IN CC IN FATAL CRASH BY YEAR | 22 |
| CHART 13: MOTORCYCLE RIDER FATALITIES BY YEAR AND LAND USE | 25 |
| CHART 14: FATALLY INJURED MOTORCYCLE RIDERS BY YEAR AND HELMET USE | 27 |
| CHART 15: MOTORCYCLE RIDER FATALITIES BY YEAR AND ROADWAY TYPE | 29 |
| CHART 16: MOTORCYCLE RIDER FATALITIES BY YEAR AND SPEEDING FACTOR..... | 30 |
| CHART 17: MOTORCYCLE OPERATOR FATALITIES BY YEAR AND OPERATOR BAC..... | 32 |
| CHART 18: MOTORCYCLE OPERATOR FATALITIES BY YEAR, LICENSE STATUS, AND LICENSE COMPLIANCE | 33 |
| CHART 19: MOTORCYCLE RIDER FATALITY RATE BY REGISTERED MOTORCYCLES, VMT, AND YEAR | 35 |
| CHART 20: MOTORCYCLE RIDER FATALITY RATE BY AGE GROUP PER 100,000 U.S. RESIDENT POPULATION AND YEAR | 36 |
| CHART 21: MOTORCYCLE OPERATOR FATALITIES IN 2004 BY AGE GROUP AND ALCOHOL LEVEL | 38 |
| CHART 22: MOTORCYCLE OPERATOR FATALITIES IN 2004 BY ENGINE SIZE CC AND ALCOHOL LEVEL | 38 |
| CHART 23: MOTORCYCLE RIDER FATALITIES IN 2004 BY AGE GROUP AND DAY OF WEEK | 39 |
| CHART 24: MOTORCYCLE RIDER FATALITIES IN 2004 BY ENGINE SIZE CC AND DAY OF WEEK | 39 |
| CHART 25: MOTORCYCLE RIDER FATALITIES IN 2004 BY AGE GROUP AND ROADWAY FUNCTION CLASS | 40 |
| CHART 26: MOTORCYCLE RIDER FATALITIES IN 2004 BY ENGINE SIZE CC AND ROADWAY FUNCTION CLASS | 40 |

| | |
|--|-----------|
| CHART 27: MOTORCYCLE RIDER FATALITIES IN 2004 BY AGE GROUP AND CRASH TYPE | 41 |
| CHART 28: MOTORCYCLE RIDER FATALITIES IN 2004 BY ENGINE SIZE CC AND CRASH TYPE | 41 |
| CHART 29: FATALLY INJURED MOTORCYCLE RIDERS IN 2004 BY AGE GROUP AND HELMET USE | 42 |
| CHART 30: FATALLY INJURED MOTORCYCLE RIDERS IN 2004 BY ENGINE SIZE CC AND HELMET USE | 42 |
| CHART 31: MOTORCYCLE RIDER FATALITIES IN 2004 BY AGE GROUP AND SPEEDING..... | 43 |
| CHART 32: MOTORCYCLE RIDER FATALITIES IN 2004 BY ENGINE SIZE CC AND SPEEDING | 43 |
| CHART 33: MOTORCYCLE OPERATOR FATALITIES IN 2004 BY AGE GROUP AND LICENSE STATUS | 44 |
| CHART 34: MOTORCYCLE OPERATOR FATALITIES IN 2004 BY ENGINE SIZE CC AND LICENSE STATUS | 44 |

1. EXECUTIVE SUMMARY

This report was written to provide insight and update into the recent continued increasing trend in motorcycle rider fatalities. The analysis was based on 1995-2004 data from: the Fatality Analysis Reporting System (FARS), a census of all fatal motor vehicle crashes; Motorcycle Industry Council (MIC) motorcycle sales and market distribution data; Federal Highway Administration (FHWA) motorcycle registration and vehicle miles traveled (VMT) data; and the United States Census Bureau general population data.

Motorcycle rider fatalities decreased each year from 1995 to 1997, reaching a historic low of 2,116 in 1997. Beginning in 1998 this trend was reversed and motorcycle rider fatalities have increased each year. Since 1997 motorcycle rider fatalities have increased by 89 percent from 2,116 to 4,008 in 2004. NHTSA previously released a comprehensive report in 2001 based on increases in motorcycle rider fatalities for two consecutive years (1998 and 1999). The latest 2004 data show that motorcycle rider fatalities increased for the seventh year in a row since 1997. This report is an update to the previously released report in 2001 along with more recent data from 1995 to 2004.

The recently released 2005 projections show motorcycle rider fatalities are expected to increase for the eighth year in a row. The increase in motorcycle rider fatalities from 2004 to 2005 as per the projections is 7.7 percent – from 4,008 to 4,315.

1.1. Purpose

The purpose of this report is to:

- Combine NHTSA's motor vehicle crash data from FARS with data from the Motorcycle Industry Council (MIC), the Federal Highway Administration (FHWA) and the U.S. Census Bureau;
- Analyze combined data within specific problem areas by looking for trends and calculating rates; and
- Identify areas that may explain the possible causes for the recent continued increases in motorcycle rider fatalities.

The analytical approach involved several steps. First, a review of the data sources was conducted to determine the appropriate data elements to be examined within FARS, and to determine whether exposure data by age groups were available. Motorcycle registration data and VMT data by age groups were not available from FHWA. Ownership data by age groups for four different years were available from MIC and were used to complement the fatal crash data with new rider data. Resident population data from the U.S. Census Bureau were also used for analysis based on age groups. Motorcycle registration and VMT data from FHWA were used to calculate rates over the ten-year period from 1995 to 2004 to identify trends.

1.2. Findings

The findings from the analysis described in this report identify a variety of trends from FARS data, available exposure data, and calculated rates. Analyses from all data sources support FARS data which found greater involvement of riders in the 40 and above age group and larger (1,001-1,500 cc) engine motorcycles in fatal crashes. If the patterns seen in the analyses continue as seen from the combination of data sources, there is the likelihood that the increase in motorcycle rider fatalities will continue in the future years also. These findings could aid in the design of crash prevention programs:

- Motorcycle Industry Council (MIC) data show an increase in the number of on-highway motorcycles and motorcycle registration data from the Federal Highway Administration (FHWA) also show an increase in the number of registered motorcycles;
- MIC data show an increase in motorcycle ownership in the 40 and above age group and FARS data show an increase in motorcycle rider fatalities in the age group of 40 and above in the last 10 years;
- According to MIC, sales of motorcycles with larger engine sizes have increased over the past years, corresponding to FARS data where an increased number of motorcycle rider fatalities involve a motorcycle with a larger engine size;
- An increased number of motorcycle rider fatalities in the 40 and above age group were seen on rural roadways;
- Among roadway types, undivided roadways accounted for a majority of motorcycle rider fatalities;
- Speeding is one of the major contributing factors in motorcycle crashes especially among motorcycle riders under the age of 30;
- Motorcycle operators with a blood alcohol concentration (BAC) of .08 g/dL or higher continue to be a major problem;
- Helmet use among fatally injured motorcycle riders has remained constant, at just above 50 percent in the last ten years;
- About two-thirds (66%) of the fatally injured motorcycles riders in States without universal helmet laws in 2004 were not wearing helmets compared to 15 percent in States with universal helmet laws, and
- Among all riders, motorcycle operator fatalities under the age of 20 had larger percentages of improperly licensed.

2. INTRODUCTION

More than 125,000 motorcycle riders have died in traffic crashes since the enactment of the Highway Safety Act of 1966 and The National Traffic and Motor Vehicle Safety Act of 1966.

The recently released 2005 projections show motorcycle rider fatalities are expected to increase for the eighth year in a row. The increase in motorcycle rider fatalities from 2004 to 2005 as per the projections is 7.7 percent – from 4,008 to 4,315. According to these projections, motorcycle rider fatalities will account for 10 percent of the 43,200 total fatalities from motor vehicle crashes. All data in this report are based on motorcycle rider fatalities from 1995-2004.

In 2004, motorcycles made up nearly 2.4 percent of all registered vehicles in the United States and accounted for only 0.3 percent of all vehicle miles traveled. In comparison, motorcycle riders accounted for 5.3 percent of total traffic fatalities in 1995 and have increased to 9.4 percent of the total traffic fatalities in 2004. Per 100,000 registered vehicles, the fatality rate for motorcycle riders (69.33) in 2004 was 4.6 times the fatality rate for passenger car occupants (15.05). Per vehicle mile traveled in 2004, motorcycle riders (39.89) were about 34 times more likely than passenger car occupants (1.18) to die in a motor vehicle traffic crash.

The purpose of this report is to identify areas that may explain the possible causes for the recent continued increases in motorcycle rider fatalities.

In order to better understand the reasons for the increase in fatalities, FARS data can be analyzed in various cross tabulations of many data elements. These analyses among the different variables provide better insight into the specific problem areas relating to the increase in fatalities. This analysis and report is based on FARS data elements in various cross tabulations either individual or combined.

The following sections detail data used in the analysis, describe the methodology to analyze crash and exposure data, highlight the findings, and summarize the implications for crash prevention programs.

3. ANALYTICAL APPROACH AND DATA SOURCES

3.1. Analytical Approach

The analytical approach for the report involved the following steps:

- Review of the data sources, FARS, MIC, FHWA and the U.S. Census Bureau, to determine the data elements of interest in FARS and how these data sources could be combined with data from the other three sources;
- Calculation of proportions and rates to analyze 10 years of trend data and within specific data elements; and
- Summarization of data that focus on increases in motorcycle rider fatalities.

3.2. Data Sources

Four data sources were used in this analysis:

- Fatality Analysis Reporting System (FARS) data relating to fatal traffic crashes;
- 2004 Motorcycle Industry Council (MIC) Statistical Annual data relating to ownership, retail sales, and motorcycle population;
- Federal Highway Administration (FHWA) data relating to motorcycle registration and vehicle miles traveled (VMT); and
- U.S. Census Bureau data relating to resident population.

The following sections provide some comparisons from the four data sources that have been used in this analysis.

4. DATA ANALYSIS

4.1. Summary Data

4.1.1. Fatality Analysis Reporting System (FARS) Data

Motorcycle rider fatalities increased from 2,227 in 1995 to 4,008 in 2004. Motorcycle rider fatalities in 1997 had reached an all time low of 2,116 and from then, have increased every year. A review of FARS data from 1995 through 2004 shows that in 1997 motorcycle rider fatalities (2,116) were only 5.3 percent of the overall motor vehicle fatalities (42,013) and in 2004 motorcycle rider fatalities (4,008) have increased to 9.4 percent of the total motor vehicle fatalities (42,636). Table 1 shows the distribution of motor vehicle crash fatalities by year and person type from 1995 to 2004.

Table 1: Fatalities from Motor Vehicle Crashes by Year and Person Type

| Year | Person Type | | | | | | | | Total Fatalities | |
|------|-----------------------------------|----|-------------|---|-----------------------------------|---|------------------------------|----|------------------|-----|
| | Occupants by Vehicle Type | | | | | | Non Motorists ⁽³⁾ | | | |
| | Passenger ⁽¹⁾ Vehicles | | Motorcycles | | Others/ Unknown ⁽²⁾ | | | | | |
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| 1995 | 31,991 | 77 | 2,227 | 5 | 1,073 | 3 | 6,526 | 16 | 41,817 | 100 |
| 1996 | 32,437 | 77 | 2,161 | 5 | 1,099 | 3 | 6,368 | 15 | 42,065 | 100 |
| 1997 | 32,448 | 77 | 2,116 | 5 | 1,161 | 3 | 6,288 | 15 | 42,013 | 100 |
| 1998 | 31,899 | 77 | 2,294 | 6 | 1,189 | 3 | 6,119 | 15 | 41,501 | 100 |
| 1999 | 32,127 | 77 | 2,483 | 6 | 1,265 | 3 | 5,842 | 14 | 41,717 | 100 |
| 2000 | 32,225 | 77 | 2,897 | 7 | 1,226 | 3 | 5,597 | 13 | 41,945 | 100 |
| 2001 | 32,043 | 76 | 3,197 | 8 | 1,200 | 3 | 5,756 | 14 | 42,196 | 100 |
| 2002 | 32,843 | 76 | 3,270 | 8 | 1,262 | 3 | 5,630 | 13 | 43,005 | 100 |
| 2003 | 32,271 | 75 | 3,714 | 9 | 1,356 | 3 | 5,543 | 13 | 42,884 | 100 |
| 2004 | 31,693 | 74 | 4,008 | 9 | 1,441 | 3 | 5,494 | 13 | 42,636 | 100 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

(1) Passenger cars, pickups, vans, sport utility vehicles (SUVs), and other light trucks.

(2) Others/Unknown vehicle type includes large trucks, buses, other types of vehicles, and unknown type of vehicle.

(3) Non-motorists include pedestrians and pedalcyclists.

4.1.2. Motorcycle Industry Council (MIC) Data

According to the most recent *Motorcycle Industry Council Statistics Annual (2004)*, motorcycle registrations accounted for 2.3 percent of all motor vehicles registered for use on public roads in 2003.

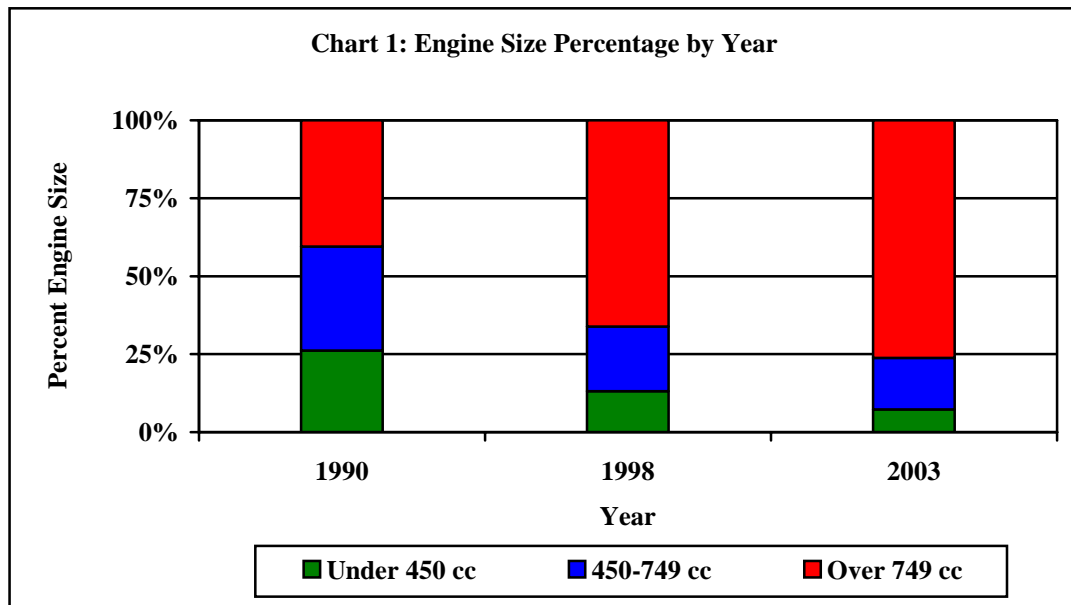
There were 3.0 motorcycles in use for every 100 persons living in United States in 2003. California, Florida, Texas, New York, and Pennsylvania represented one-third (33 percent) of the motorcycles in use in 2003. By region, the South had the highest motorcycle population in 2003 with 30 percent of the total motorcycles in use. The West showed the highest motorcycle penetration, at 3.4 vehicles per 100 persons. The Midwest had 3.3 motorcycles per 100 persons; the East had 2.8 motorcycles per 100 persons; and the South had 2.8 motorcycles per 100 persons.

An estimated 6,390,000 on-highway motorcycles were in use in 2003 compared to 3,650,000 motorcycles in 1990, an increase of 75 percent between 1990 and 2003. Table 2 shows the distribution of motorcycles by engine size in cubic centimeters (cc) for the years 1990, 1998, and 2003. More than three-fourths (76 percent) of the motorcycles in 2003 had an engine displacement of over 749 cc, compared to 40

percent in 1990. The percentage of motorcycles for all other engine sizes has decreased from 1990 to 2003. These data indicate that motorcycles with engines over 749 cc are becoming more prevalent. Chart 1 shows the percentages of motorcycles of different engine size groups for the years 1990, 1998, and 2003.

| Table 2: On-Highway Motorcycles by Engine Displacement in cc | | | | | | |
|---|----------------------|--------------|------------------|--------------|------------------|--------------|
| Engine Displacement | Calendar Year | | | | | |
| | 1990 | | 1998 | | 2003 | |
| | No. | % | No. | % | No. | % |
| Under 125 cc | 430,700 | 11.8 | 202,000 | 4.2 | 234,500 | 3.7 |
| 125-349 cc | 328,500 | 9.0 | 240,400 | 5.0 | 223,800 | 3.5 |
| 350-449 cc | 197,100 | 5.4 | 187,600 | 3.9 | 5,900 | 0.1 |
| 450-749 cc | 1,215,500 | 33.3 | 995,500 | 20.7 | 1,052,600 | 16.5 |
| Over 749 cc | 1,478,200 | 40.5 | 3,183,500 | 66.2 | 4,873,200 | 76.2 |
| Total | 3,650,000 | 100.0 | 4,809,000 | 100.0 | 6,390,000 | 100.0 |

Source: Motorcycle Industry Council Statistics, 2004



Source: Motorcycle Industry Council Statistics, 2004

Table 3 shows the number of new on-highway motorcycle units sold from 1995-2004. There has been an increase each year in the number of units sold, from 1995. The cumulative increase in the number of units sold is almost 128 percent between 1995 and 2003 with most of the increases occurring in 1998, 1999, and 2000. An estimated 379,000 new on-highway motorcycle units were sold in 1999, about 27 percent over the previous year and an increase of over 50 percent from the 247,000 units sold in 1997. The average number of units sold between 1995 and 2003 was 408,100 units per year.

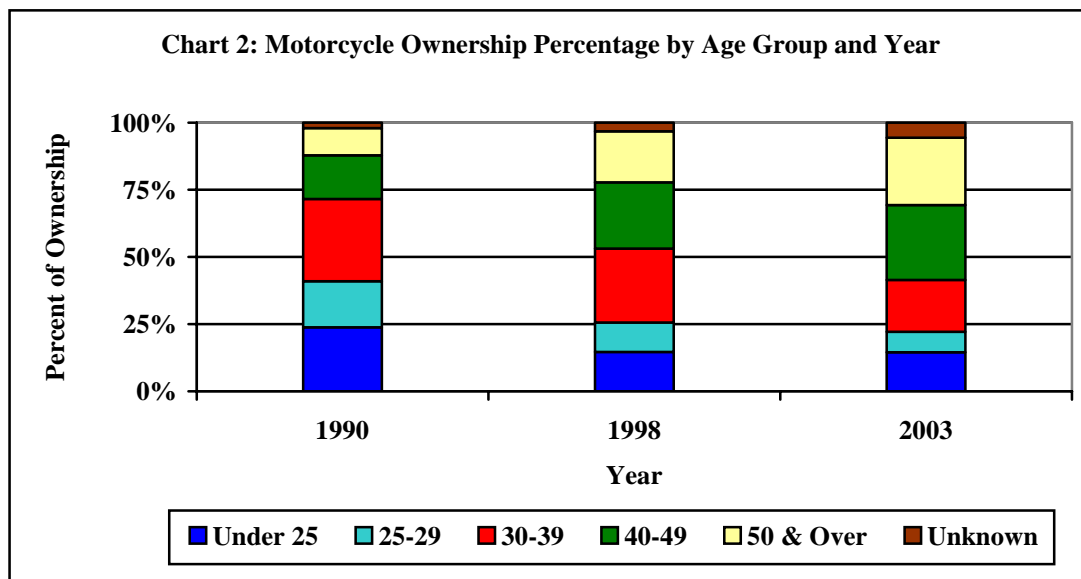
| Table 3: New On-Highway Motorcycle Units Sold by Year and Percent and Cumulative Increases | | | |
|---|-------------------|--|----------------------------|
| Year | Units Sold | Percent Increase from Previous Year | Cumulative Increase |
| 1995 | 214,000 | +1.9 | +3.7 |
| 1996 | 228,000 | +6.5 | +10.2 |
| 1997 | 247,000 | +9.2 | +19.4 |
| 1998 | 298,000 | +20.6 | +40.0 |
| 1999 | 379,000 | +27.2 | +67.2 |
| 2000 | 471,000 | +24.3 | +91.5 |
| 2001 | 556,000 | +18.0 | +109.5 |
| 2002 | 618,000 | +11.2 | +120.7 |
| 2003 | 662,000 | +7.1 | +127.8 |
| 2004 | * | * | * |

Source: Motorcycle Industry Council statistics, 2004
 * Data not available yet

The mean age of a motorcycle owner in 2003 was 40.2 years, compared to 38.1 years in 1998, and 33.1 years in 1990. Table 4 and Chart 2 show the percent of ownership of motorcycles by age groups for three individual years. The percent of ownership for those age 50 years and over in 2003 was 25.1 percent compared to 19.1 percent in 1998 and 10.1 percent in 1990. Similar increases are also seen in the 40-49 age group. Motorcycle ownership in the under 18, 25-29, and 30-34 age groups showed corresponding decreases. The largest percentage decrease was in the 25-29 age group, and the greatest increase was in the 50 and over age group.

| Table 4: Ownership of Motorcycles by Age Group | | | |
|--|------------|------------|------------|
| Age | Year | | |
| | 1990 | 1998 | 2003 |
| Under 18 | 8.3% | 4.1% | 3.7% |
| 18 – 24 | 15.5% | 10.6% | 10.8% |
| 25 – 29 | 17.1% | 10.9% | 7.6% |
| 30 – 34 | 16.4% | 11.5% | 8.9% |
| 35 – 39 | 14.3% | 16.0% | 10.4% |
| 40 – 49 | 16.3% | 24.6% | 27.9% |
| 50 and Over | 10.1% | 19.1% | 25.1% |
| Not Stated | 2.0% | 3.2% | 5.6% |
| Median Age | 32.0 Years | 38.0 Years | 41.0 Years |
| Mean Age | 33.1 Years | 38.1 Years | 40.2 Years |

Source: Motorcycle Industry Council statistics, 2004



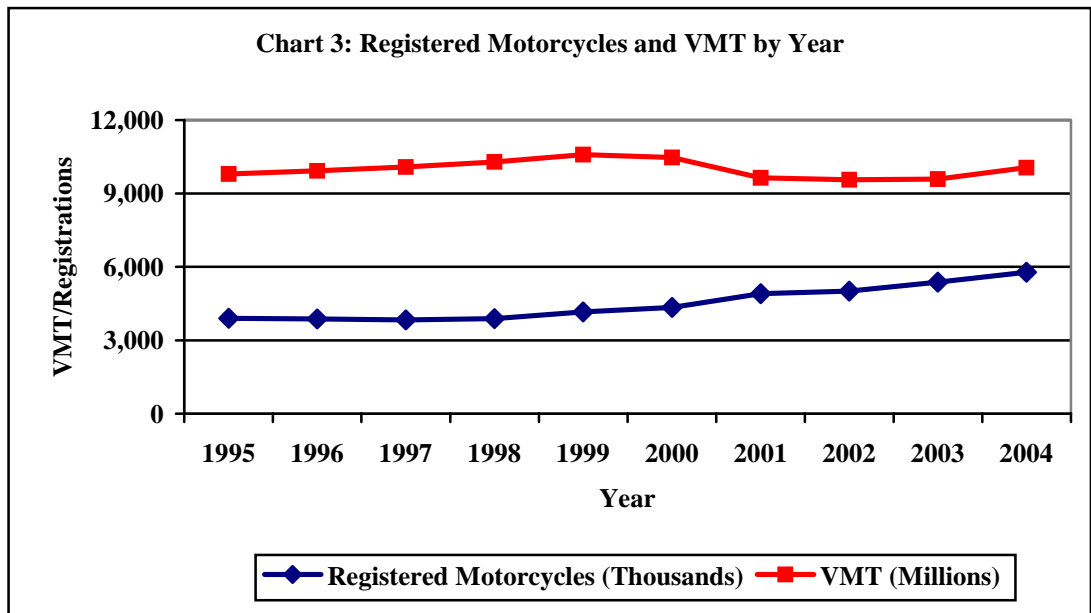
Source: Motorcycle Industry Council Statistics, 2004

4.1.3. Federal Highway Administration (FHWA) Data

Table 5 shows motorcycle registrations and vehicle miles traveled (VMT) data from 1995 to 2004. The data show that motorcycle registrations have increased from 1995 to 2004 by nearly 48 percent while the VMT for motorcycles shows an increase of about 3 percent from 1995 to 2004. Chart 3 shows trend lines for motorcycle registrations and VMT from 1995-2004.

| Table 5: Motorcycle Registrations and Vehicle Miles Traveled (VMT) by Year | | |
|---|---------------------------------|----------------------------------|
| Year | Motorcycle Registrations | Motorcycle VMT (Millions) |
| 1995 | 3,897,191 | 9,797 |
| 1996 | 3,871,599 | 9,920 |
| 1997 | 3,826,373 | 10,081 |
| 1998 | 3,879,450 | 10,283 |
| 1999 | 4,152,433 | 10,584 |
| 2000 | 4,346,068 | 10,469 |
| 2001 | 4,903,056 | 9,639 |
| 2002 | 5,004,156 | 9,552 |
| 2003 | 5,370,035 | 9,577 |
| 2004 | 5,780,870 | 10,048 |

Source: FHWA



Source: FHWA

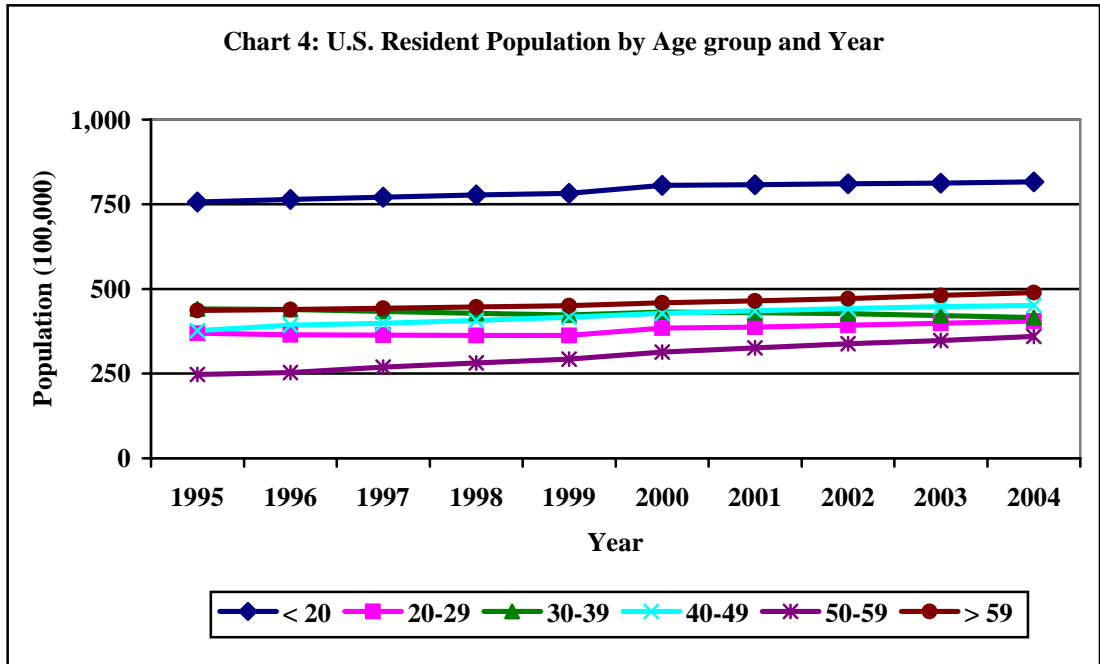
4.1.4. U.S. Census Bureau Data

The U.S. population increased from 262,803,000 in 1995 to 293,655,000 in 2004, or by nearly 12 percent according to the estimates released by the Census Bureau on December 22, 2004. Table 6 and Chart 4 show population estimates from 1995 to 2004 by age group.

The population in the under 20, 40-49, 50-59, and over 59 age groups has steadily increased each year from 1995 to 2004; and population in the 30-39 age group has decreased each year since 1995 except in 2000. Population in the 20-29 age group decreased each year from 1995 to 1999, after which it has increased every year. The greatest increase in population has been in the 50-59 age group, followed by 40-49 age group. From 1995-2004, the population in the 50-59 age group increased by more than 45 percent, and by nearly 20 percent in the 40-49 age group. In 2004, the proportion of 50-59 population was 12 percent of the overall population compared to 9 percent in 1995. The increases in under 20 and 20-29 age groups for the same years were 8 percent and 10 percent respectively. The decrease in population in the 30-39 age group was nearly 6 percent.

| Table 6: Estimate of U.S. Resident Population (100,000) by Year and Age Group | | | | | | | |
|--|--------------------------------------|--------------|--------------|--------------|--------------|----------------|--------------|
| Year | Resident Population Age Group | | | | | | Total |
| | < 20 | 20-29 | 30-39 | 40-49 | 50-59 | > 59 | |
| 1995 | 756.8 | 368.9 | 441.2 | 377.2 | 247.3 | 436.7 | 2,628.0 |
| 1996 | 764.4 | 364.4 | 438.7 | 392.4 | 252.8 | 439.5 | 2,652.3 |
| 1997 | 771.0 | 363.1 | 433.7 | 398.5 | 269.1 | 442.5 | 2,677.8 |
| 1998 | 777.0 | 362.5 | 427.8 | 407.4 | 281.2 | 446.5 | 2,702.5 |
| 1999 | 781.9 | 362.3 | 422.7 | 416.2 | 293.2 | 450.5 | 2,726.9 |
| 2000 | 805.5 | 384.3 | 432.0 | 427.5 | 313.3 | 459.3 | 2,821.9 |
| 2001 | 807.8 | 387.4 | 430.1 | 435.5 | 326.0 | 464.3 | 2,851.0 |
| 2002 | 809.8 | 392.4 | 426.5 | 442.2 | 337.8 | 470.9 | 2,879.4 |
| 2003 | 812.2 | 398.8 | 421.3 | 447.5 | 347.6 | 480.5 | 2,907.9 |
| 2004 | 815.5 | 405.3 | 415.2 | 451.8 | 359.9 | 488.8 | 2,936.6 |

Source: Census Bureau



Source: Census Bureau

The analyses of all data are categorized into two broad categories: motorcycle rider fatality trends covering a ten year span and common crash characteristics relating to motorcycles covering only the latest 2004 data. Additional data used in the analysis, but not shown in this section, are shown at the end of the report in Appendix A.

4.2. Trends

4.2.1. Motorcycle Rider Fatalities by Person Type

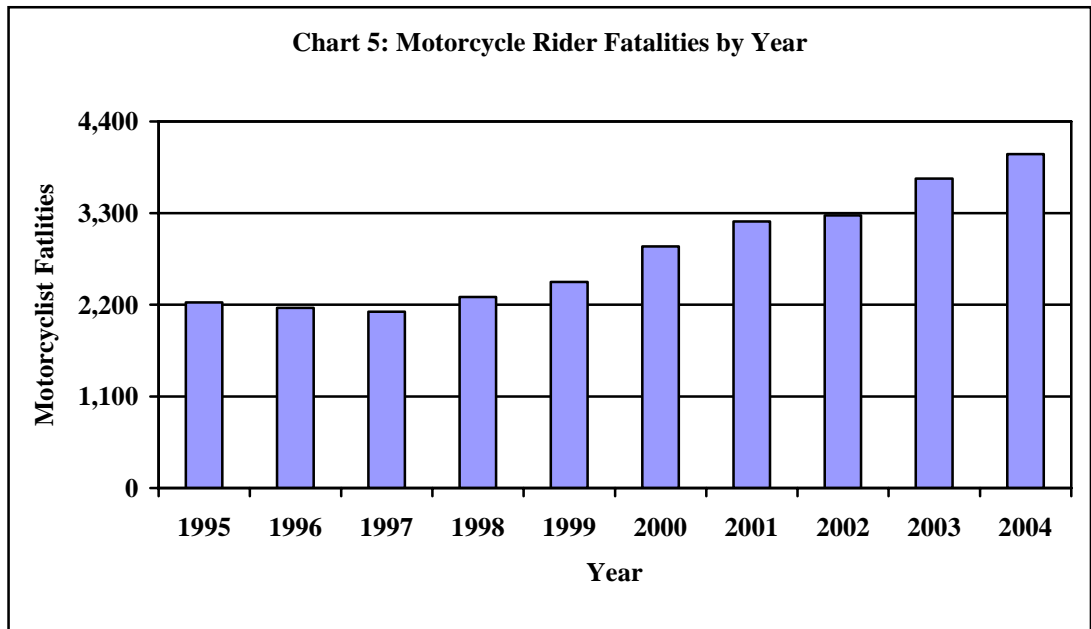
In 2004, the fatality rate for motorcycle riders per 100,000 registered motorcycles was 69.33, an increase of 21 percent from 57.14 in 1995. The fatality rate for motorcycle riders per 100 million VMT in 2004 was 39.89 compared to 22.73 in 1995. Motorcycle rider fatalities and fatality rates from 1995 to 2004 are shown in Table 7. Chart 5 depicts motorcycle rider fatalities by year.

Table 7: Motorcycle Rider Fatalities and Fatality Rates by Year and Per Registered Vehicle and Vehicle Miles of Travel

| Year | Registered Motorcycles | Vehicle Miles Traveled (Millions) | Motorcycle Rider Fatalities | Fatality Rate per 100,000 Registered Motorcycles | Fatality Rate per 100 Million VMT |
|------|------------------------|-----------------------------------|-----------------------------|--|-----------------------------------|
| 1995 | 3,897,191 | 9,797 | 2,227 | 57.14 | 22.73 |
| 1996 | 3,871,599 | 9,920 | 2,161 | 55.82 | 21.78 |
| 1997 | 3,826,373 | 10,081 | 2,116 | 55.30 | 20.99 |
| 1998 | 3,879,450 | 10,283 | 2,294 | 59.13 | 22.31 |
| 1999 | 4,152,433 | 10,584 | 2,472 | 59.53 | 23.46 |
| 2000 | 4,346,068 | 10,469 | 2,897 | 66.66 | 27.67 |
| 2001 | 4,903,056 | 9,639 | 3,197 | 65.20 | 33.17 |
| 2002 | 5,004,156 | 9,552 | 3,270 | 65.35 | 34.23 |
| 2003 | 5,370,035 | 9,577 | 3,714 | 69.16 | 38.78 |
| 2004 | 5,780,870 | 10,048 | 4,008 | 69.33 | 39.89 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF), VMT, Registered Motorcycles – FHWA

Chart 5: Motorcycle Rider Fatalities by Year

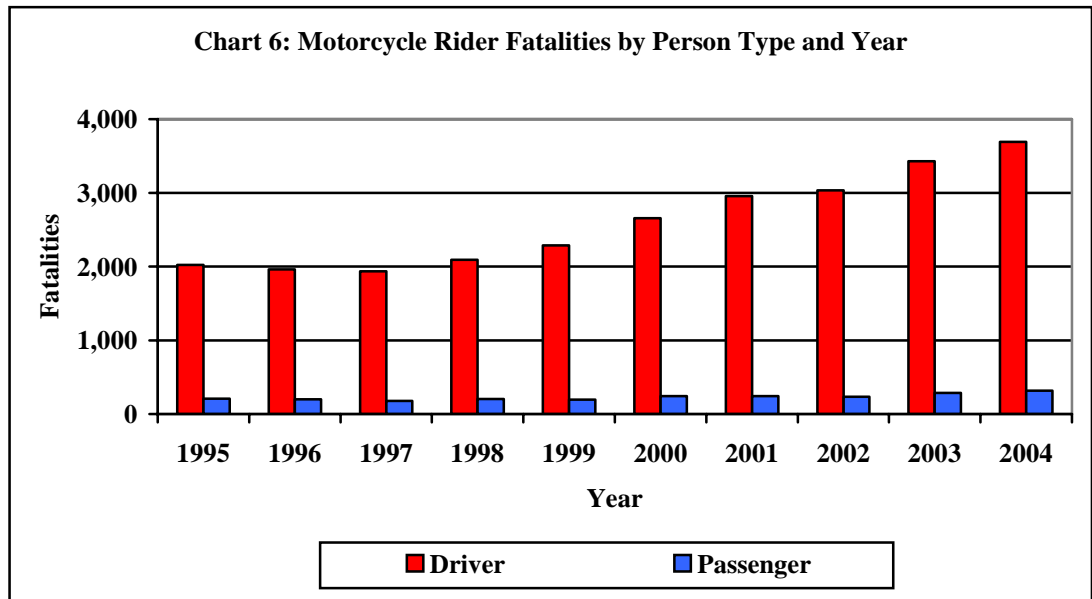


Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

4.2.2. Motorcycle Rider Fatalities by Person Type

Motorcycle rider fatalities reached a historic low of 2,116 in 1997, and have increased each year since reaching the low. Table 8 and Chart 6 show motorcycle rider fatalities from 1995 to 2004 by person type. In all the years motorcycle operators accounted for more than 90 percent of the fatalities while motorcycle passengers accounted for less than 10 percent. Even though motorcycle operator fatalities have increased by nearly 83 percent from 1995 to 2004 and motorcycle passenger fatalities have increased by 52 percent, the proportion of motorcycle operator to passenger fatalities has remained the same in the last 10 years.

| Table 8: Motorcycle Rider Fatalities by Year and Person Type | | | | | |
|---|--------------------------|----------|------------------|----------|--------------|
| Year | Operator (Driver) | | Passenger | | Total |
| | No. | % | No. | % | |
| 1995 | 2,020 | 91 | 207 | 9 | 2,227 |
| 1996 | 1,962 | 91 | 199 | 9 | 2,161 |
| 1997 | 1,937 | 92 | 179 | 8 | 2,116 |
| 1998 | 2,089 | 91 | 205 | 9 | 2,294 |
| 1999 | 2,286 | 92 | 197 | 8 | 2,483 |
| 2000 | 2,653 | 92 | 244 | 8 | 2,897 |
| 2001 | 2,955 | 92 | 242 | 8 | 3,197 |
| 2002 | 3,034 | 93 | 236 | 7 | 3,270 |
| 2003 | 3,427 | 92 | 287 | 8 | 3,714 |
| 2004 | 3,693 | 92 | 315 | 8 | 4,008 |
| Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF) | | | | | |



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

Table 9 shows motorcycle rider fatalities by sex from 1995 to 2004. The data show that for the past ten years about 90 percent of the motorcycle riders killed were males. The number of female riders killed has more than doubled in the past ten years, but the proportion has remained at about 10 percent.

Table 9: Motorcycle Rider Fatalities by Year and Sex

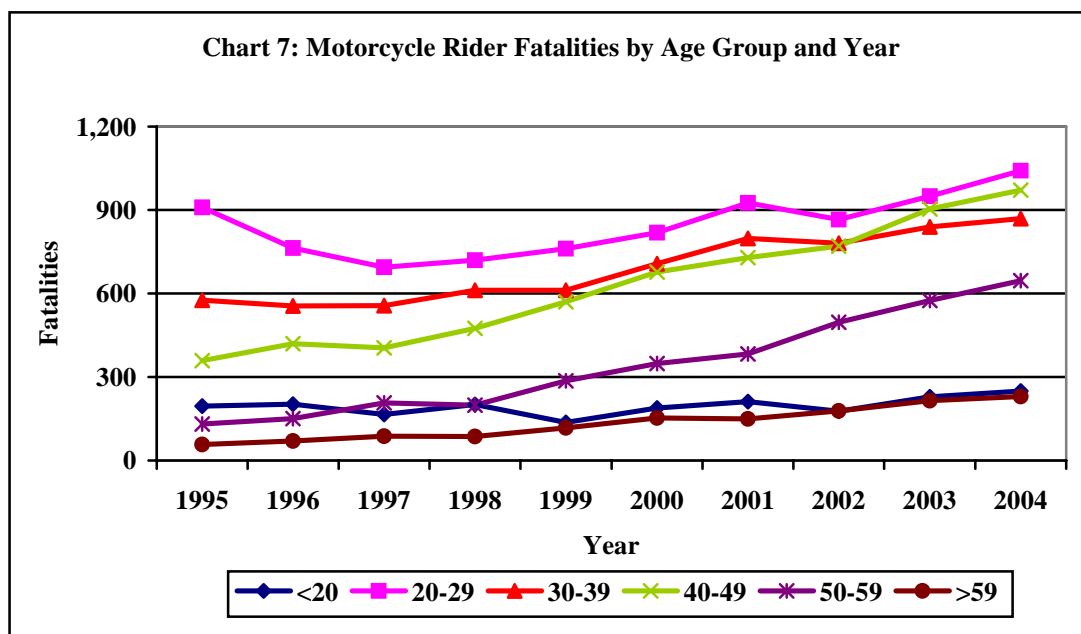
| Year | Motorcycle Rider Sex | | | | | | Total |
|------|----------------------|----|--------|----|---------|---|-------|
| | Male | | Female | | Unknown | | |
| | No. | % | No. | % | No. | % | |
| 1995 | 2,024 | 91 | 203 | 9 | 0 | 0 | 2,227 |
| 1996 | 1,966 | 91 | 195 | 9 | 0 | 0 | 2,161 |
| 1997 | 1,926 | 91 | 190 | 9 | 0 | 0 | 2,116 |
| 1998 | 2,088 | 91 | 206 | 9 | 0 | 0 | 2,294 |
| 1999 | 2,257 | 91 | 225 | 9 | 1 | 0 | 2,472 |
| 2000 | 2,620 | 90 | 277 | 10 | 0 | 0 | 2,897 |
| 2001 | 2,904 | 91 | 293 | 9 | 0 | 0 | 3,197 |
| 2002 | 2,961 | 91 | 309 | 9 | 0 | 0 | 3,270 |
| 2003 | 3,342 | 90 | 372 | 10 | 0 | 0 | 3,714 |
| 2004 | 3,575 | 89 | 431 | 11 | 2 | 0 | 4,008 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

4.2.3. Motorcycle Rider Fatalities by Age Groups (Percent)

Table 10 and Chart 7 show the number of motorcycle rider fatalities from 1995 to 2004 by age group. Motorcycle rider fatalities, from 1995 to 2004, have increased in all the age groups. The number of motorcycle rider fatalities in the age group of 40-49 has steadily increased, each year from 405 in 1997 to 971 in 2004, an increase of 140 percent. The largest percentage increase during this time period was in the over 59 age group. In all the years (1995-2004) the largest number of motorcycle rider fatalities was in the 20-29 age group.

| Table 10: Motorcycle Rider Fatalities by Year and Age Group | | | | | | | | |
|--|-----------------------------------|--------------|--------------|--------------|--------------|---------------|----------------|--------------|
| Year | Motorcycle Rider Age Group | | | | | | Unknown | Total |
| | < 20 | 20-29 | 30-39 | 40-49 | 50-59 | >59 | | |
| 1995 | 195 | 909 | 576 | 359 | 131 | 57 | 0 | 2,227 |
| 1996 | 202 | 763 | 555 | 420 | 151 | 70 | 0 | 2,161 |
| 1997 | 166 | 694 | 556 | 405 | 207 | 87 | 1 | 2,116 |
| 1998 | 201 | 720 | 612 | 475 | 199 | 86 | 1 | 2,294 |
| 1999 | 137 | 761 | 612 | 570 | 286 | 117 | 0 | 2,483 |
| 2000 | 189 | 818 | 707 | 677 | 348 | 153 | 5 | 2,897 |
| 2001 | 211 | 925 | 798 | 729 | 383 | 149 | 2 | 3,197 |
| 2002 | 177 | 866 | 781 | 770 | 496 | 178 | 2 | 3,270 |
| 2003 | 229 | 950 | 839 | 904 | 575 | 215 | 2 | 3,714 |
| 2004 | 250 | 1,041 | 869 | 971 | 646 | 230 | 1 | 4,008 |
| Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF) | | | | | | | | |



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

Even though motorcycle rider fatalities increased in every age group between 1995 and 2004, the proportion of motorcycle rider fatalities increased for the 40-49, 50-59, and over 59 age groups and declined for the under 20, 20-29, and 30-39 age groups. Table 11 shows the percent of motorcycle rider fatalities by age groups for the last 10 years. The percent of motorcycle rider fatalities in the 40-49 age group has increased by a factor of 1.5 from 16.1 percent in 1995 to 24.2 percent in 2004, in the 50-59 age group by a factor of 2.7 from 5.9 percent in 1995 to 16.1 percent in 2004 and in the over 59 age group by a factor of 2.1 from 2.6 percent to 5.7 percent over the same period of time.

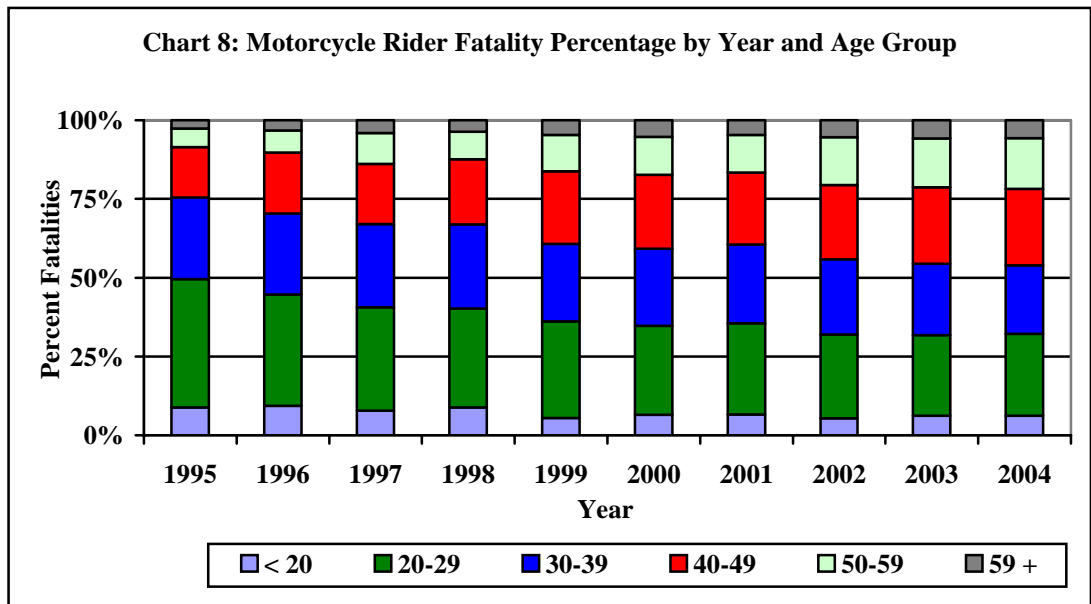
These increases have been observed for the most part, in the over 40 age group. The percent of fatalities in the 20-29 age group has declined considerably between 1995 and 2004 and declines were also seen in the percent of fatalities in the under 20 and the 30-39 age groups during the same period.

However, there are still proportionally more fatalities in the 20-29 year age group than in the other age groups from 1995 to 2004. This indicates that the 20-29 age group is still the leading age group in terms of the number of motorcycle rider fatalities among all age groups. Chart 8 shows motorcycle rider fatality percentage by year and age group.

Table 11: Motorcycle Rider Fatalities as Percent by Year and Age Group

| Year | Motorcycle Rider Age Group by Percent | | | | | |
|------|---------------------------------------|-------|-------|-------|-------|------|
| | < 20 | 20-29 | 30-39 | 40-49 | 50-59 | > 59 |
| 1995 | 8.8 | 40.8 | 25.9 | 16.1 | 5.9 | 2.6 |
| 1996 | 9.3 | 35.3 | 25.7 | 19.4 | 7.0 | 3.2 |
| 1997 | 7.8 | 32.8 | 26.3 | 19.1 | 9.8 | 4.1 |
| 1998 | 8.8 | 31.4 | 26.7 | 20.7 | 8.7 | 3.7 |
| 1999 | 5.5 | 30.6 | 24.6 | 23.0 | 11.5 | 4.7 |
| 2000 | 6.5 | 28.2 | 24.4 | 23.4 | 12.0 | 5.3 |
| 2001 | 6.6 | 28.9 | 25.0 | 22.8 | 12.0 | 4.7 |
| 2002 | 5.4 | 26.5 | 23.9 | 23.5 | 15.2 | 5.4 |
| 2003 | 6.2 | 25.6 | 22.6 | 24.3 | 15.5 | 5.8 |
| 2004 | 6.2 | 26.0 | 21.7 | 24.2 | 16.1 | 5.7 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

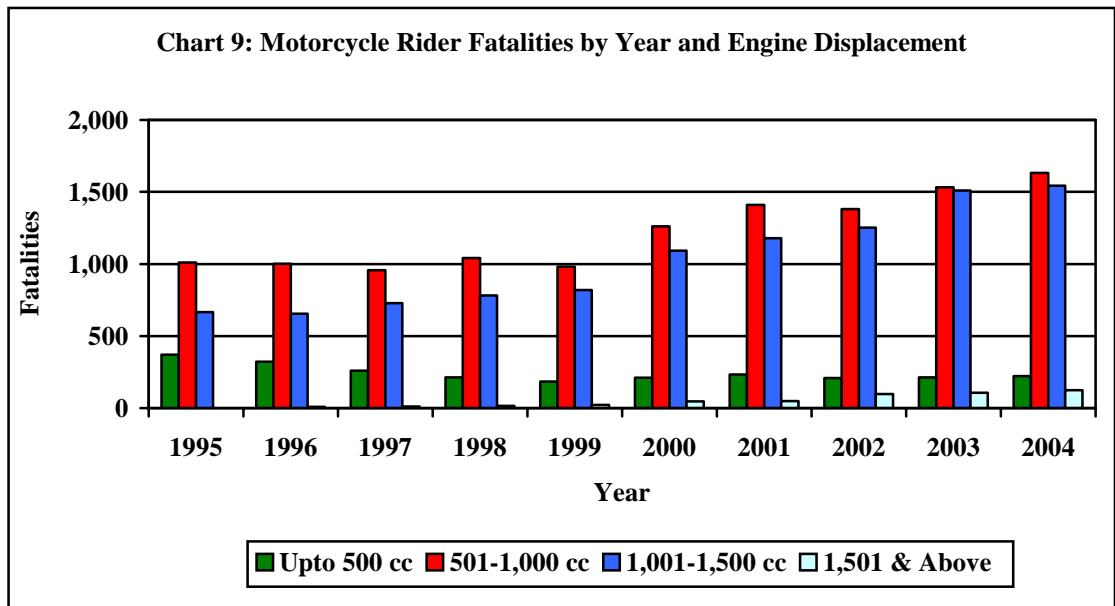
4.2.4. Motorcycle Rider Fatalities by Engine Displacement in Cubic Centimeters (cc)

The overall increase in motorcycle rider fatalities in recent years has been due to a considerable increase in motorcycle rider fatalities within the 1,001-1,500 cc engine size group. The number of motorcycle rider fatalities in the 1,001-1,500 cc engine group increased from 666 in 1995 to 1,542 in 2004, an increase of 132 percent. Increases in motorcycle rider fatalities were also seen in the 501-1,000 cc and over 1,500 cc engine groups. The largest number of motorcycle rider fatalities is still in the 501-1,000 cc engine group. However, the fatality count among motorcycle riders in the 1,001-1,500 cc group is quickly approaching the 501-1,000 cc level. Motorcycle rider fatalities declined in the 500 cc and below engine group by 40 percent from 1995 to 2004. Fatalities in the 501-1,000 cc group have increased by 62 percent during the same time period. Starting in 1996, a small number of all motorcycle rider fatalities are reported involving motorcycles with engine displacements greater than 1,500 cc. Table 12 and Chart 9 show motorcycle rider fatalities from 1995 to 2004 by engine displacement.

Table 12: Motorcycle Rider Fatalities by Year and Engine Displacement

| Year | Engine Displacement in Cubic Centimeters | | | | | | | | | | Total |
|------|--|----|-----------|----|-------------|----|---------|---|---------|----|-------|
| | Up to 500 | | 501-1,000 | | 1,001-1,500 | | > 1,500 | | Unknown | | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | |
| 1995 | 370 | 17 | 1,009 | 45 | 666 | 30 | 0 | 0 | 182 | 8 | 2,227 |
| 1996 | 321 | 15 | 1,001 | 46 | 654 | 30 | 8 | 0 | 177 | 8 | 2,161 |
| 1997 | 260 | 12 | 957 | 45 | 729 | 34 | 11 | 1 | 159 | 8 | 2,116 |
| 1998 | 214 | 9 | 1,040 | 45 | 781 | 34 | 16 | 1 | 243 | 11 | 2,294 |
| 1999 | 185 | 7 | 982 | 40 | 818 | 33 | 23 | 1 | 475 | 19 | 2,483 |
| 2000 | 210 | 7 | 1,261 | 44 | 1,092 | 38 | 46 | 2 | 288 | 10 | 2,897 |
| 2001 | 233 | 7 | 1,410 | 44 | 1,178 | 37 | 48 | 2 | 328 | 10 | 3,197 |
| 2002 | 209 | 6 | 1,381 | 42 | 1,252 | 38 | 98 | 3 | 330 | 10 | 3,270 |
| 2003 | 213 | 6 | 1,531 | 41 | 1,510 | 41 | 106 | 3 | 354 | 10 | 3,714 |
| 2004 | 221 | 6 | 1,631 | 41 | 1,542 | 38 | 124 | 3 | 490 | 12 | 4,008 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

4.2.5. Motorcycle Rider Fatalities in 1,001-1,500 cc Engine Size by Year and Age Group

Data from Table 12 showed that, between 1995 and 2004 the major increase in motorcycle rider fatalities was in the 1,001-1,500 cc engine size group. Analysis of data from Table 13 shows the number of motorcycle rider fatalities in the 1,001-1,500 cc engine size category has increased in the 30-39, 40-49, 50-59, and over 59 age groups between 1995 and 2004. Motorcycle rider fatalities have been steadily increasing in the 40-49 age group each year since 1995; fatalities in the 50-59 age group have been increasing each year since 1998.

Between 1995 and 2004, motorcycle rider fatalities for the 1,001-1,500 cc engine size have increased by 3.1 times in the 40-49 age group and by 5.3 times in 50-59 age group. This increase in motorcycle rider fatality numbers indicates the involvement of more large motorcycles (1,001-1,500 cc engine size) with riders over 40 years of age, in fatal crashes.

The percentage of motorcycle rider fatalities in the 40-49 age group has increased from 27 percent in 1995 to 37 percent in 2004 in the 1,001-1,500 cc engine size. About 72 percent of the motorcycle rider fatalities in 2004 were in the 40 and over age group and the remaining 28 percent in the under 40 age group, compared to 43

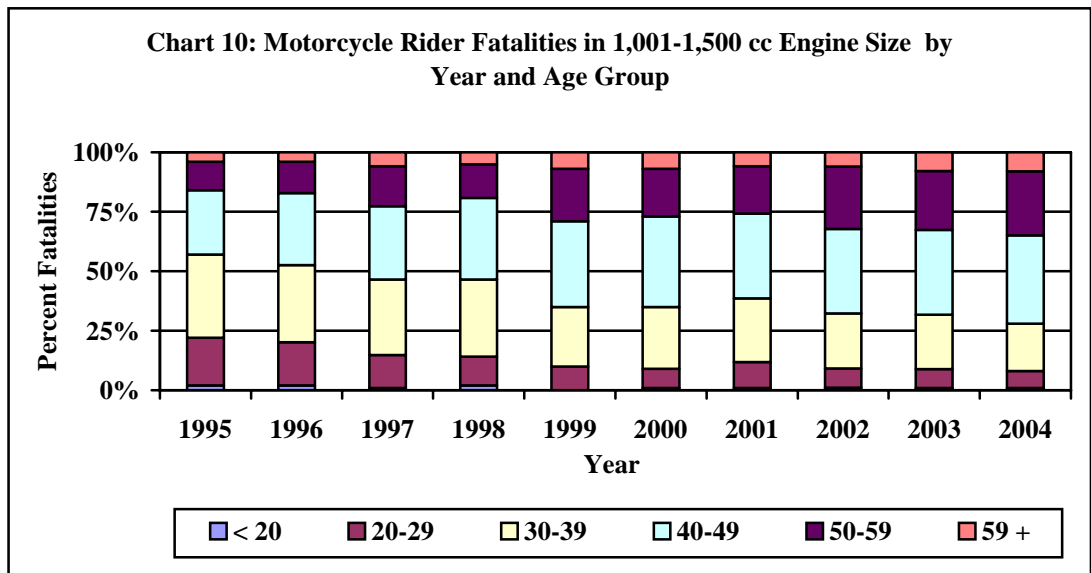
percent in over 40 age group, and 57 percent in under 40 age group in 1995. Chart 10 shows motorcycle rider fatalities in 1,001-1,500 cc engine size motorcycles by age group and year.

Table 13: Motorcycle Rider Fatalities in 1,001-1,500 cc Engine Size by Year and Age Group

| Year | Motorcycle Rider Age Group | | | | | | | | | | | | Total* |
|------|----------------------------|---|-------|----|-------|----|-------|----|--------|----|-----|---|--------|
| | < 20 | | 20-29 | | 30-39 | | 40-49 | | 50- 59 | | 59+ | | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | |
| 1995 | 12 | 2 | 135 | 20 | 233 | 35 | 182 | 27 | 77 | 12 | 27 | 4 | 666 |
| 1996 | 15 | 2 | 119 | 18 | 211 | 32 | 198 | 30 | 85 | 13 | 26 | 4 | 654 |
| 1997 | 8 | 1 | 99 | 14 | 232 | 32 | 225 | 31 | 124 | 17 | 41 | 6 | 729 |
| 1998 | 17 | 2 | 91 | 12 | 252 | 32 | 267 | 34 | 111 | 14 | 42 | 5 | 781 |
| 1999 | 3 | 0 | 79 | 10 | 205 | 25 | 294 | 36 | 177 | 22 | 60 | 7 | 818 |
| 2000 | 9 | 1 | 92 | 8 | 282 | 26 | 416 | 38 | 215 | 20 | 75 | 7 | 1,092 |
| 2001 | 12 | 1 | 125 | 11 | 313 | 27 | 420 | 36 | 236 | 20 | 71 | 6 | 1,178 |
| 2002 | 9 | 1 | 105 | 8 | 290 | 23 | 443 | 35 | 324 | 26 | 81 | 6 | 1,252 |
| 2003 | 18 | 1 | 122 | 8 | 342 | 23 | 541 | 36 | 371 | 25 | 116 | 8 | 1,510 |
| 2004 | 13 | 1 | 105 | 7 | 310 | 20 | 575 | 37 | 413 | 27 | 126 | 8 | 1,542 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

* Includes unknown age.



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

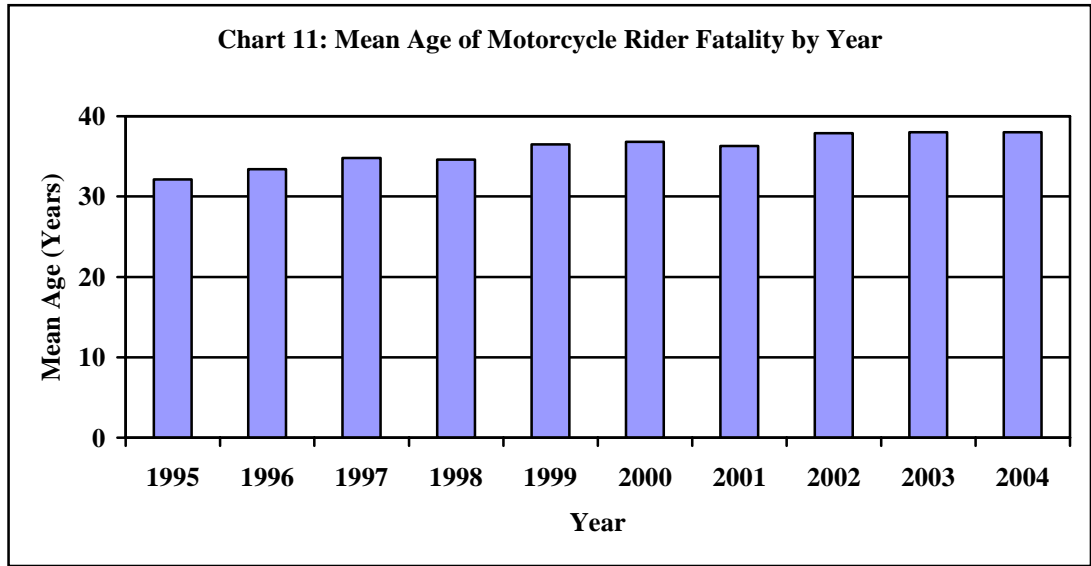
4.2.6. Mean Age of Motorcycle Riders Killed and Mean Engine Displacement in Fatal Crashes

The average age of motorcycle riders killed in crashes has increased each year from 1995 to 2004. The mean age of the motorcycle rider killed in 2004 was 38.0 years compared to 32.1 years in 1995, an increase of nearly 6 years. Similarly the mean engine displacement of the motorcycles involved in fatal crashes has increased from 841 cc in 1995 to 1,015 cc in 2004. The data indicate an increase in the average age of motorcycle riders killed and greater involvement of motorcycles with larger engines in fatal crashes. Table 14 shows the mean age of motorcycle riders killed and mean engine displacement in fatal crash from 1995 to 2004. Charts 11 and 12 show the trend in the last ten years in, motorcycle rider mean age and mean engine size of motorcycles involved in fatal crashes.

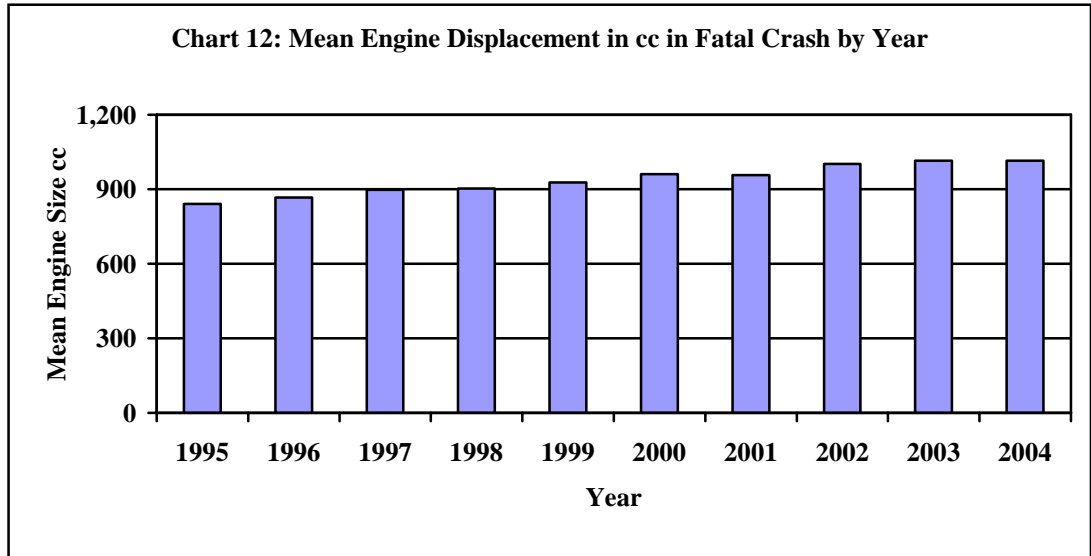
| Table 14: Mean Age of Motorcycle Rider Fatalities and Mean Engine Displacement in cc Involved in Fatal Crash by Year | | |
|---|---|---|
| Year | Mean Age of Motorcycle Rider Killed (Years) ⁽¹⁾ | Mean Engine Displacement Involved in Fatal Crash (cc) ⁽²⁾ |
| 1995 | 32.1 | 841 |
| 1996 | 33.4 | 866 |
| 1997 | 34.8 | 897 |
| 1998 | 34.6 | 902 |
| 1999 | 36.5 | 927 |
| 2000 | 36.8 | 961 |
| 2001 | 36.3 | 957 |
| 2002 | 37.9 | 1,002 |
| 2003 | 38.0 | 1,014 |
| 2004 | 38.0 | 1,015 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

Note: ⁽¹⁾ Excludes unknown occupant age, ⁽²⁾ Excludes unknown engine size



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

4.2.7. Motorcycle Rider Fatalities by Day of Week

In the last ten years, the proportion of motorcycle rider fatalities during weekdays and weekends has changed slightly with a slight increase in fatalities during weekends. A greater number of motorcycle rider fatalities are seen during weekends. NHTSA uses the following definition for weekdays and weekends:

Weekday: 6 a.m. Monday through 5:59 p.m. Friday.

Weekend: 6 p.m. Friday through 5:59 a.m. Monday.

Based on the definition mentioned above, the number of hours during a weekend is 60 (2½ days) and during weekdays is 108 (4½ days). The total number of weekend days during a year is 130 (52 weeks x 2½ days) and the total number of weekdays during a year is 234 (52 weeks x 4½ days). In 2004, there were 1,891 motorcycle rider fatalities during weekdays, which translates to an average of 8 fatalities every day and there were 2,107 weekend fatalities, which translates to an average of 16 fatalities every day. Hence, there were twice as many motorcycle rider fatalities during weekends than during weekdays. This might suggest more recreational motorcycle riding during weekends. Table 15 shows motorcycle rider fatalities by year and day of week.

| Year | Day of Week | | | | | | Total |
|------|-------------|----|---------|----|---------|---|-------|
| | Weekday | | Weekend | | Unknown | | |
| | No. | % | No. | % | No. | % | |
| 1995 | 1,113 | 50 | 1,100 | 49 | 14 | 1 | 2,227 |
| 1996 | 1,068 | 49 | 1,086 | 50 | 7 | 0 | 2,161 |
| 1997 | 988 | 47 | 1,120 | 53 | 8 | 0 | 2,116 |
| 1998 | 1,081 | 47 | 1,204 | 52 | 9 | 0 | 2,294 |
| 1999 | 1,162 | 47 | 1,314 | 53 | 7 | 0 | 2,483 |
| 2000 | 1,323 | 46 | 1,563 | 54 | 11 | 0 | 2,897 |
| 2001 | 1,525 | 48 | 1,660 | 52 | 12 | 0 | 3,197 |
| 2002 | 1,568 | 48 | 1,695 | 52 | 7 | 0 | 3,270 |
| 2003 | 1,736 | 47 | 1,959 | 53 | 19 | 1 | 3,714 |
| 2004 | 1,891 | 47 | 2,107 | 53 | 10 | 0 | 4,008 |

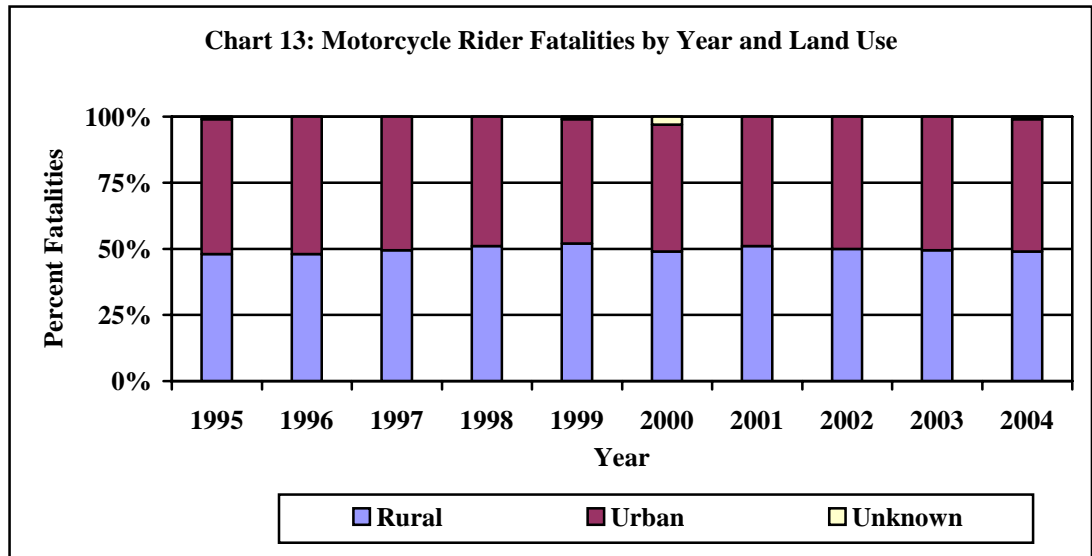
Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

4.2.8. Motorcycle Rider Fatalities by Land Use

The increase in motorcycle rider fatalities has been very steady in rural and urban areas in the past ten years but the proportion of motorcycle rider fatalities has remained almost the same. Table 16 shows the breakdown of motorcycle rider fatalities by land use for the years 1995 through 2004. Rural motorcycle rider fatalities increased by 89 percent from 1,047 in 1997 to 1,982 in 2004; and urban motorcycle rider fatalities increased by 88 percent from 1,064 in 1997 to 2,004 in 2004. Chart 13 shows the proportions of motorcycle rider fatalities by land use from 1995-2004.

| Year | Land Use | | | | | | Total |
|------|----------|----|-------|----|---------|---|-------|
| | Rural | | Urban | | Unknown | | |
| | No. | % | No. | % | No. | % | |
| 1995 | 1,070 | 48 | 1,144 | 51 | 13 | 1 | 2,227 |
| 1996 | 1,027 | 48 | 1,126 | 52 | 8 | 0 | 2,161 |
| 1997 | 1,047 | 49 | 1,064 | 50 | 5 | 0 | 2,116 |
| 1998 | 1,166 | 51 | 1,119 | 49 | 9 | 0 | 2,294 |
| 1999 | 1,290 | 52 | 1,175 | 47 | 18 | 1 | 2,483 |
| 2000 | 1,428 | 49 | 1,385 | 48 | 84 | 3 | 2,897 |
| 2001 | 1,631 | 51 | 1,562 | 49 | 4 | 0 | 3,197 |
| 2002 | 1,641 | 50 | 1,625 | 50 | 4 | 0 | 3,270 |
| 2003 | 1,824 | 49 | 1,874 | 50 | 16 | 0 | 3,714 |
| 2004 | 1,982 | 49 | 2,004 | 50 | 22 | 1 | 4,008 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

4.2.9. Motorcycle Rider Fatalities by Crash Type

Motorcycle rider fatalities in single-vehicle and multivehicle crashes each year is shown in Table 17. Motorcycle rider fatalities in single-vehicle crashes increased by 88 percent from 960 in 1995 to 1,808 in 2004 and in multivehicle crashes increased by 74 percent from 1,267 in 1995 to 2,200 in 2004. The proportions of motorcycle rider fatalities in single-vehicle to multivehicle crashes do not indicate any significant variation over the ten-year period.

| Year | Single-vehicle Crash | | Multivehicle Crash | | Total |
|------|----------------------|---------|--------------------|---------|-------|
| | Number | Percent | Number | Percent | |
| 1995 | 960 | 43 | 1,267 | 57 | 2,227 |
| 1996 | 937 | 43 | 1,224 | 57 | 2,161 |
| 1997 | 937 | 44 | 1,179 | 56 | 2,116 |
| 1998 | 1,042 | 45 | 1,252 | 55 | 2,294 |
| 1999 | 1,140 | 46 | 1,343 | 54 | 2,483 |
| 2000 | 1,307 | 45 | 1,590 | 55 | 2,897 |
| 2001 | 1,469 | 46 | 1,728 | 54 | 3,197 |
| 2002 | 1,540 | 47 | 1,730 | 53 | 3,270 |
| 2003 | 1,629 | 44 | 2,085 | 56 | 3,714 |
| 2004 | 1,808 | 45 | 2,200 | 55 | 4,008 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

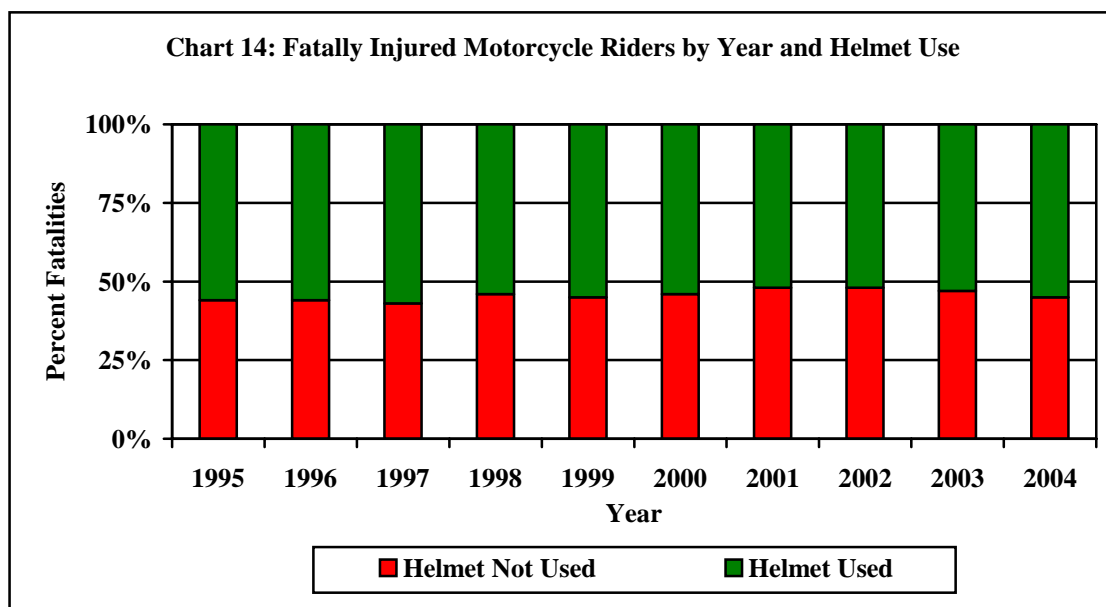
4.2.10. Fatally Injured Motorcycle Riders by Helmet Use

Helmet use rate in crashes among fatally injured motorcycle riders has remained almost the same from 1995 to 2004. Table 18 shows the number and percent of fatally injured motorcycle riders by helmet use from 1995 to 2004. Chart 14 depicts the percent of fatally injured motorcycle riders who used and did not use helmets.

In 2004, 20 States, the District of Columbia, and Puerto Rico required helmet use by all motorcycle operators and passengers. In another 27 States, only persons under a specific age, usually 18, were required to wear helmets. Three States had no laws requiring helmet use. Table 19 shows fatally injured motorcycle riders by their helmet usage in States with and without universal helmet laws in 2003 and 2004. Two-thirds (66%) of the fatally injured motorcycles riders in States without universal helmet laws in 2004 were not wearing helmets compared to 15 percent in States with universal helmet laws.

| Table 18: Fatally Injured Motorcycle Riders by Year and Helmet Use | | | | | |
|---|------------------------|----------------|--------------------|----------------|--------------|
| Year | Helmet Use | | | | Total |
| | Helmet Not Used | | Helmet Used | | |
| | Number | Percent | Number | Percent | |
| 1995 | 980 | 44 | 1,247 | 56 | 2,227 |
| 1996 | 958 | 44 | 1,203 | 56 | 2,161 |
| 1997 | 919 | 43 | 1,197 | 57 | 2,116 |
| 1998 | 1,063 | 46 | 1,231 | 54 | 2,294 |
| 1999 | 1,121 | 45 | 1,362 | 55 | 2,483 |
| 2000 | 1,339 | 46 | 1,558 | 54 | 2,897 |
| 2001 | 1,537 | 48 | 1,660 | 52 | 3,197 |
| 2002 | 1,565 | 48 | 1,705 | 52 | 3,270 |
| 2003 | 1,743 | 47 | 1,971 | 53 | 3,714 |
| 2004 | 1,794 | 45 | 2,214 | 55 | 4,008 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)
Unknown helmet use was distributed proportionally to the known use categories.



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

Table 19: Fatally Injured Motorcycle Riders in States With/Without Universal Helmet Laws

| Motorcycle Rider Fatalities | Year | | | |
|---|-------|------|-------|------|
| | 2003 | | 2004 | |
| Total in States With Universal Helmet Laws | 1,610 | 100% | 1,677 | 100% |
| Helmeted | 1,365 | 85% | 1,428 | 85% |
| Not Helmeted | 245 | 15% | 249 | 15% |
| Total in States Without Universal Helmet Laws | 2,104 | 100% | 2,331 | 100% |
| Helmeted | 615 | 29% | 792 | 34% |
| Not Helmeted | 1,489 | 71% | 1,539 | 66% |

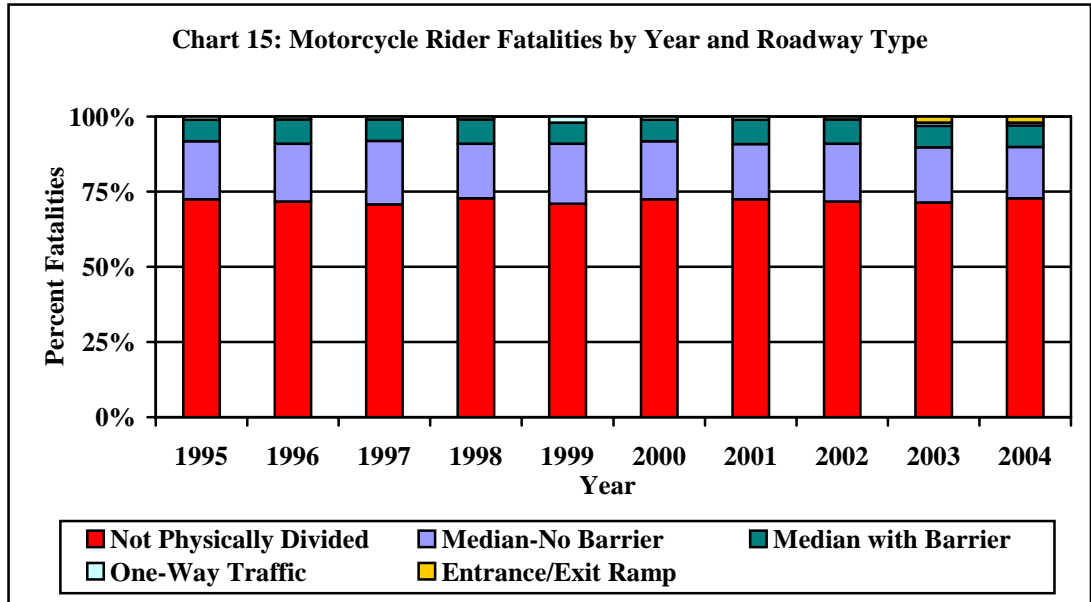
Source: NCSA, FARS 2003 (Final), 2004 (ARF)

4.2.11. Motorcycle Rider Fatalities by Roadway Type

In 2004, 72 percent of the motorcycle rider fatalities occurred on undivided roadways, another 17 percent were on roadways that had a median but with no median barrier. Data from 1995 to 2004 indicate that there are not many changes in the percentage of the fatalities occurring on different types of roadways. Starting in 2003, a new attribute (*Entrance/Exit Ramp*) was added to the variable Roadway Type. Table 20 and Chart 15 show motorcycle rider fatalities on different roadways from 1995-2004.

| Table 20: Motorcycle Rider Fatalities by Year and Roadway Type | | | | | | | | | | | |
|--|--------------|----|-------------------|----|------------------|---|-----------------|---|---------------------|---|---------|
| Year | Roadway Type | | | | | | | | | | * Total |
| | Not Divided | | Median-No Barrier | | Median w/Barrier | | One Way Traffic | | Entrance /Exit Ramp | | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | |
| 1995 | 1,586 | 71 | 431 | 19 | 145 | 7 | 31 | 1 | - | - | 2,227 |
| 1996 | 1,531 | 71 | 411 | 19 | 168 | 8 | 21 | 1 | - | - | 2,161 |
| 1997 | 1,484 | 70 | 437 | 21 | 146 | 7 | 16 | 1 | - | - | 2,116 |
| 1998 | 1,662 | 72 | 405 | 18 | 176 | 8 | 23 | 1 | - | - | 2,294 |
| 1999 | 1,762 | 71 | 491 | 20 | 163 | 7 | 42 | 2 | - | - | 2,483 |
| 2000 | 2,043 | 71 | 558 | 19 | 215 | 7 | 35 | 1 | - | - | 2,897 |
| 2001 | 2,281 | 71 | 588 | 18 | 265 | 8 | 43 | 1 | - | - | 3,197 |
| 2002 | 2,334 | 71 | 617 | 19 | 263 | 8 | 30 | 1 | - | - | 3,270 |
| 2003 | 2,609 | 70 | 679 | 18 | 275 | 7 | 45 | 1 | 67 | 2 | 3,714 |
| 2004 | 2,876 | 72 | 700 | 17 | 291 | 7 | 30 | 1 | 95 | 2 | 4,008 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)
 * Includes unknown roadway types.



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

4.2.12. Motorcycle Rider Fatalities by Speeding

The percent of motorcycle rider fatalities, in crashes where speeding was recorded as a driver contributing factor – decreased by 6 percentage points from 43 percent in 1995 to 37 percent in 2004. Table 21 shows the numbers and percentage of fatalities listed for each of the past ten years. Chart 16 shows the percentage of motorcycle rider fatalities by year and speeding factor.

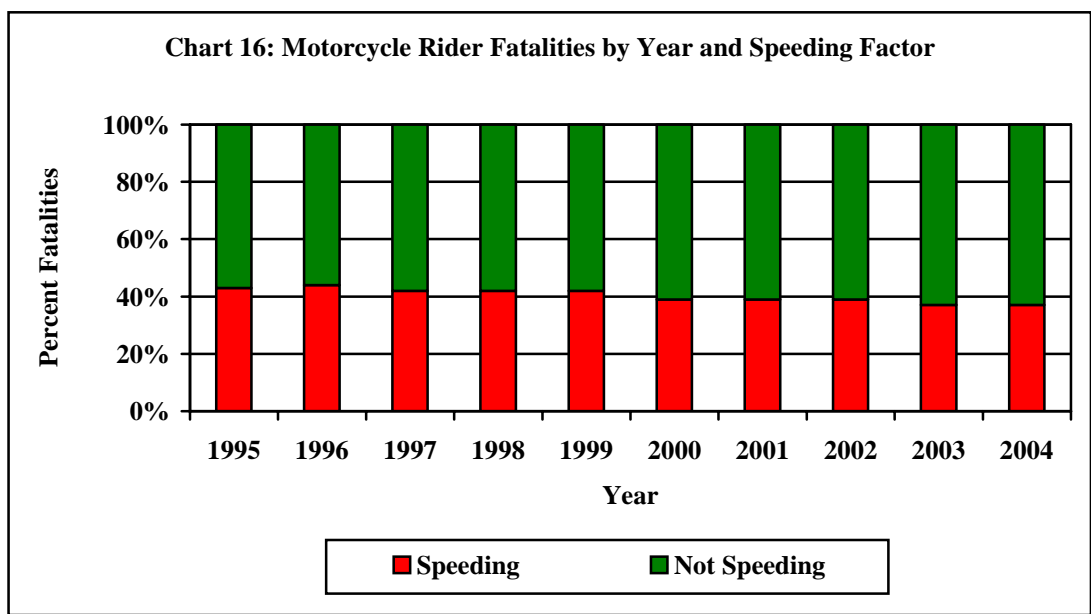
Definition: Speeding Related - A crash is considered to be speeding-related if the driver was charged with a speeding-related offense or if an officer indicated that racing, driving too fast for conditions, or exceeding the posted speed limit was a contributing factor in the crash.

Table 21: Motorcycle Rider Fatalities by Year and Speeding Factor

| Year | Speeding Factor | | | | Total |
|------|-----------------|---------|--------------|---------|-------|
| | Speeding | | Not Speeding | | |
| | Number | Percent | Number | Percent | |
| 1995 | 963 | 43 | 1,264 | 57 | 2,227 |
| 1996 | 942 | 44 | 1,219 | 56 | 2,161 |
| 1997 | 885 | 42 | 1,231 | 58 | 2,116 |
| 1998 | 956 | 42 | 1,338 | 58 | 2,294 |
| 1999 | 1,033 | 42 | 1,450 | 58 | 2,483 |
| 2000 | 1,123 | 39 | 1,774 | 61 | 2,897 |
| 2001 | 1,260 | 39 | 1,937 | 61 | 3,197 |
| 2002 | 1,272 | 39 | 1,998 | 61 | 3,270 |
| 2003 | 1,373 | 37 | 2,341 | 63 | 3,714 |
| 2004 | 1,497 | 37 | 2,511 | 63 | 4,008 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

Chart 16: Motorcycle Rider Fatalities by Year and Speeding Factor



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

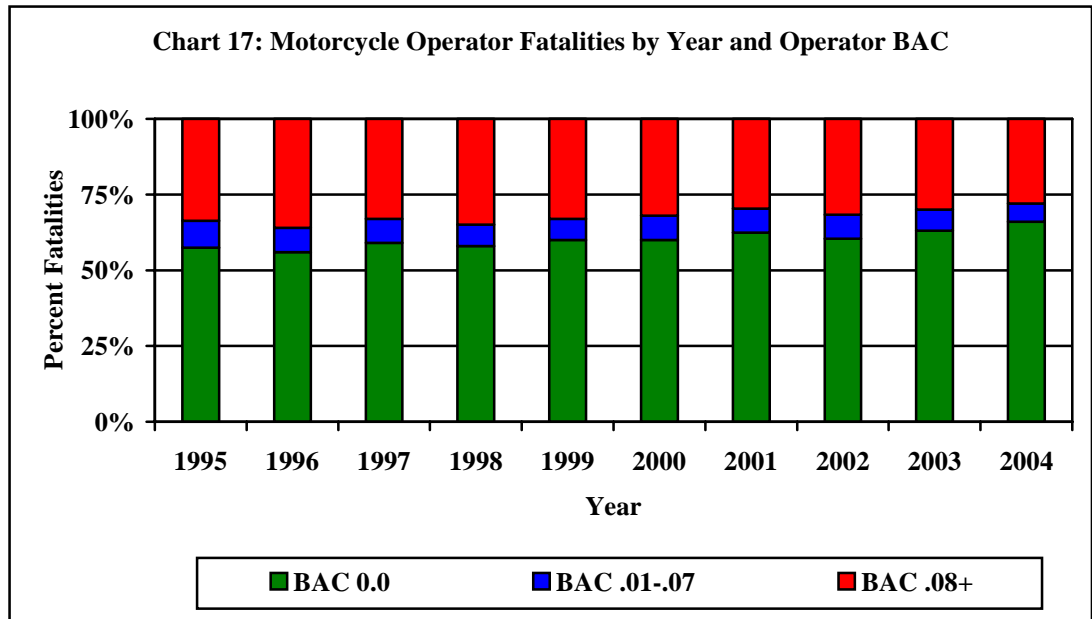
4.2.13. Motorcycle Operator Fatalities by Driver Blood Alcohol Concentration (BAC)

NHTSA defines a fatal traffic crash as being alcohol-related if either a driver or a nonoccupant (e.g., pedestrian) had a blood alcohol concentration (BAC) of .01 grams per deciliter (g/dL) or greater in a police reported traffic crash. The alcohol estimates in this report are based on multiple imputation method. For more information on the alcohol methodology refer to NHSTA document titled ‘*Transitioning to Multiple Imputation – A New Method to Impute Missing Blood Alcohol Concentration (BAC) values in FARS*’ - (DOT HS 809 403).

Persons with BACs of .08 g/dL or greater involved in fatal crashes are considered to be intoxicated. This is the legal limit of intoxication in many states. Alcohol involvement among motorcycle operators has been declining over the last ten years. The percent of fatally injured motorcycle operators, who had been drinking, declined by 8 percentage points from 42 percent in 1995 to 34 percent in 2004. But a majority of motorcycle operators killed who had been drinking were intoxicated with a BAC of .08+. In 2004, there were 1,264 operators killed who had been drinking (BAC .01+) of which 1,025 (81 percent) operators killed were intoxicated (BAC .08+). These numbers indicate that even though the alcohol involvement among motorcycle operators is declining, there is still an underlying problem because of the high proportion of motorcycle operators with BACs over .08+. Table 22 shows the numbers and percent of motorcycle operators killed by their BAC from 1995 to 2004. Chart 17 shows the percent of motorcycle operators killed by their BAC and year.

| Year | BAC .00 | | BAC .01-.07 | | BAC .08+ | | BAC .01+ | | Total |
|------|---------|----|-------------|---|----------|----|----------|----|-------|
| | No. | % | No. | % | No. | % | No. | % | |
| 1995 | 1,165 | 58 | 174 | 9 | 681 | 34 | 855 | 42 | 2,020 |
| 1996 | 1,101 | 56 | 160 | 8 | 700 | 36 | 861 | 44 | 1,962 |
| 1997 | 1,134 | 59 | 163 | 8 | 640 | 33 | 803 | 41 | 1,937 |
| 1998 | 1,214 | 58 | 139 | 7 | 736 | 35 | 875 | 42 | 2,089 |
| 1999 | 1,370 | 60 | 163 | 7 | 753 | 33 | 916 | 40 | 2,286 |
| 2000 | 1,581 | 60 | 213 | 8 | 859 | 32 | 1,072 | 40 | 2,653 |
| 2001 | 1,860 | 63 | 223 | 8 | 872 | 30 | 1,095 | 37 | 2,955 |
| 2002 | 1,840 | 61 | 236 | 8 | 958 | 32 | 1,194 | 39 | 3,034 |
| 2003 | 2,156 | 63 | 245 | 7 | 1,026 | 30 | 1,271 | 37 | 3,427 |
| 2004 | 2,429 | 66 | 239 | 6 | 1,025 | 28 | 1,264 | 34 | 3,693 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

4.2.14. Motorcycle Operator Fatalities by License Status and License Compliance

The definitions for the terms properly and improperly licensed, used in this report are based on the following:

Properly Licensed – a valid driver license (*Non-CDL License Status*) with a motorcycle endorsement, a motorcycle only license, learner’s permit; and a temporary license; or no license required for operating a motorcycle type vehicle like mopeds.

Improperly Licensed – not licensed, not licensed to operate a motorcycle, or a license that is suspended, revoked, expired, or canceled or denied.

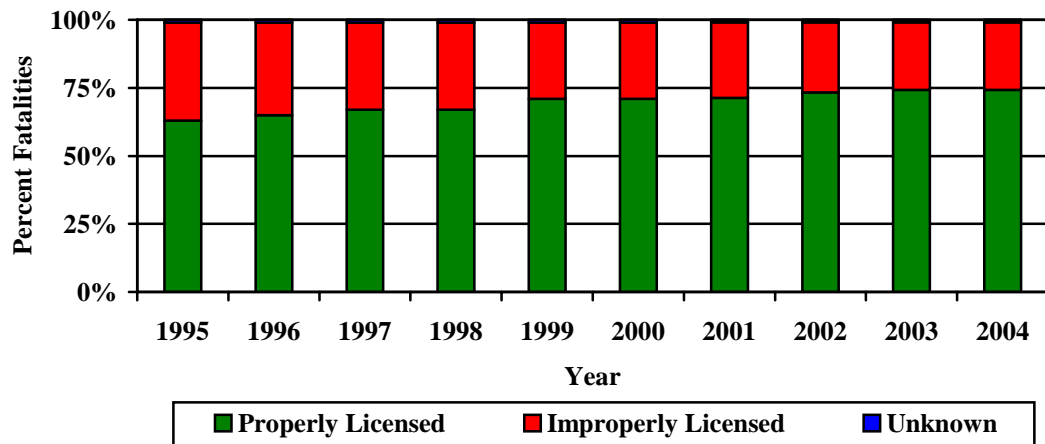
From 1995 to 2004 the percentage of fatally injured motorcycle operators who were properly licensed has increased steadily. In 2004, the percentage of properly licensed motorcycle operators killed in fatal crashes reached an all time high of 75 percent, an increase of 12 percentage points compared to 63 percent in 1995. Still 25 percent of the operators killed in 2004 were riding a motorcycle with an improper license. Table 23 shows the number and percentage of operators killed by their license status for the past ten years. Chart 18 shows the proportion of properly licensed and improperly licensed motorcycle operators killed by year.

Table 23: Motorcycle Operators Killed by Year, License Status, and License Compliance

| Year | License Status with License Compliance | | | | | | Total |
|------|--|----|---------------------|----|---------|---|-------|
| | Properly Licensed | | Improperly Licensed | | Unknown | | |
| | No. | % | No. | % | No. | % | |
| 1995 | 1,263 | 63 | 737 | 36 | 20 | 1 | 2,020 |
| 1996 | 1,274 | 65 | 666 | 34 | 22 | 1 | 1,962 |
| 1997 | 1,300 | 67 | 623 | 32 | 14 | 1 | 1,937 |
| 1998 | 1,405 | 67 | 665 | 32 | 19 | 1 | 2,089 |
| 1999 | 1,628 | 71 | 636 | 28 | 22 | 1 | 2,286 |
| 2000 | 1,894 | 71 | 738 | 28 | 21 | 1 | 2,653 |
| 2001 | 2,114 | 72 | 815 | 28 | 26 | 1 | 2,955 |
| 2002 | 2,233 | 74 | 779 | 26 | 22 | 1 | 3,034 |
| 2003 | 2,562 | 75 | 847 | 25 | 18 | 1 | 3,427 |
| 2004 | 2,753 | 75 | 909 | 25 | 31 | 1 | 3,693 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

Chart 18: Motorcycle Operator Fatalities by Year, License Status and License Compliance



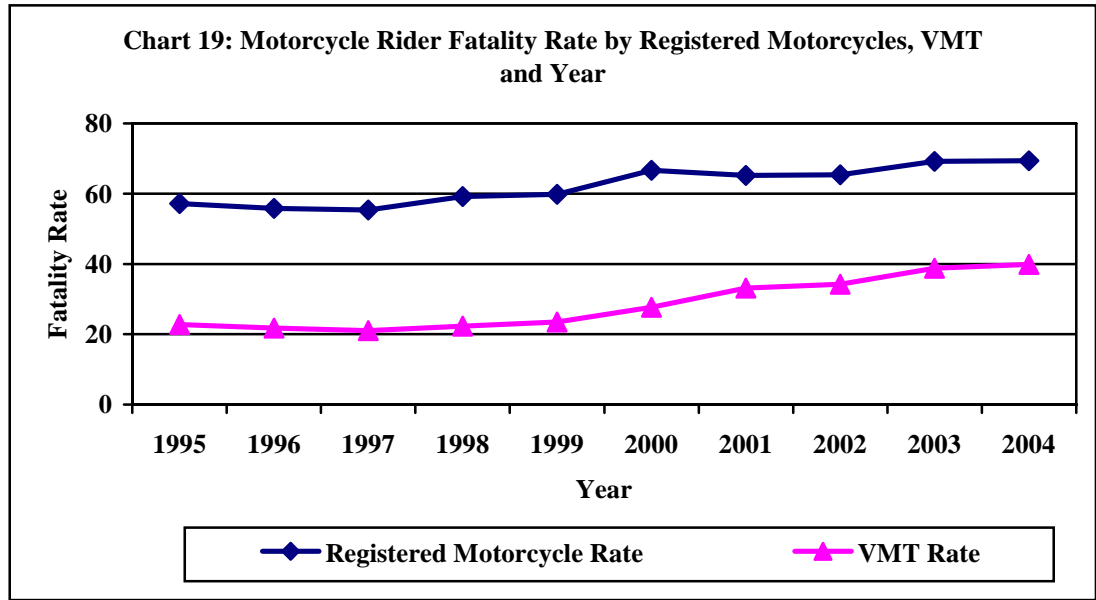
Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)

4.2.15. Motorcycle Rider Fatality Rate by Registered Motorcycles and VMT

Fatality rates for motorcycle riders declined between 1995 and 1997 when measured per 100,000 registered motorcycles and when measured per 100 million motorcycle VMT. However, starting from 1998 fatality rates started to increase steadily. The fatality rate per 100,000 registered motorcycles has increased by 25 percent from 55.30 in 1997 to 69.33 in 2004 and the fatality rate per 100 million motorcycle vehicle miles traveled has increased by 90 percent from 20.99 in 1997 to 39.89 in 2004. The number of fatalities has increased more sharply for these years than the increase in the VMT. Table 24 and Chart 19 show the fatality rates for registered motorcycles and motorcycle VMT from 1995 to 2004.

| Table 24: Motorcycle Rider Fatality Rates by Registered Motorcycles, Vehicle Miles of Travel, and Year | | |
|---|--|---------------------------------|
| Year | Rate per 100,000 Registered Motorcycles | Rate per 100 million VMT |
| 1995 | 57.14 | 22.73 |
| 1996 | 55.82 | 21.78 |
| 1997 | 55.30 | 20.99 |
| 1998 | 59.13 | 22.31 |
| 1999 | 59.80 | 23.46 |
| 2000 | 66.66 | 27.67 |
| 2001 | 65.20 | 33.17 |
| 2002 | 65.35 | 34.23 |
| 2003 | 69.16 | 38.78 |
| 2004 | 69.33 | 39.89 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)
Motorcycle Registrations, VMT – FHWA



Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF) Motorcycle Registrations, VMT – FHWA

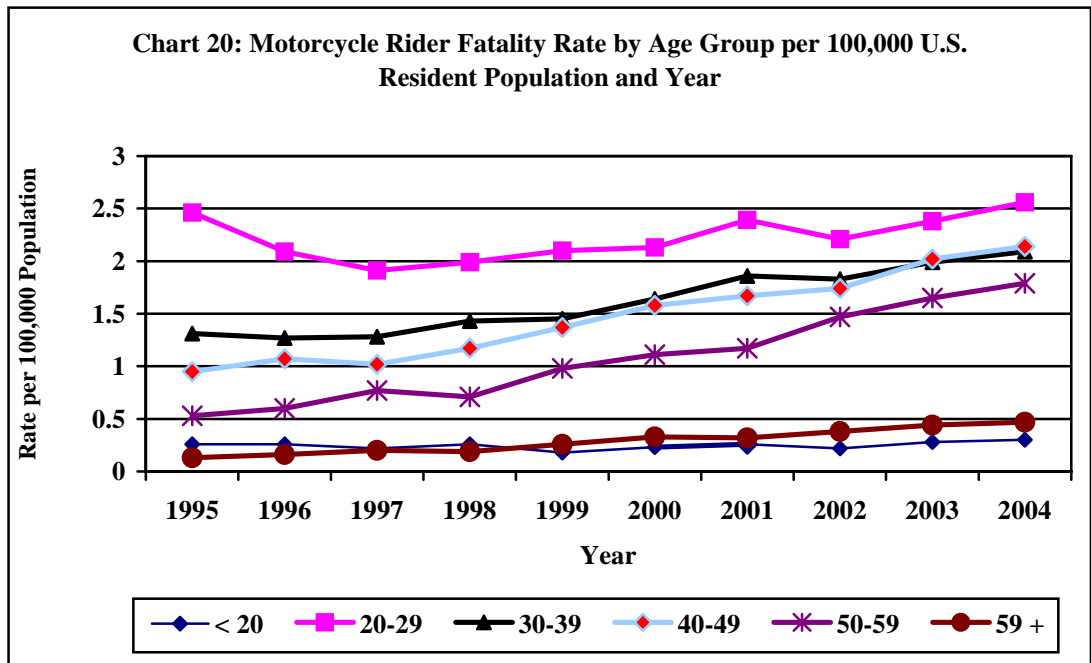
4.2.16. Motorcycle Rider Fatality Rate per 100,000 U.S. Resident Population

Even though the population of 40-49, 50-59 and over 59 age groups grew between 1995 and 2004, the increase in motorcycle rider fatalities for these groups has outpaced the increase in population as evident from the increase in the fatality rates. Table 25 gives the motorcycle rider fatality rates by age group per 100,000 US resident populations. The greatest rate increase is seen for the over 59-age group with the rate jumping from 0.13 in 1995 to 0.47 in 2004. Similarly the fatality rate for the 50-59 age group has risen from 0.53 in 1995 to 1.79 in 2004 and the fatality rate for the 40-49 age group has risen from 0.95 in 1995 to 2.14 in 2004. The rates for other age groups have also increased over the same period of time but not to the same level as seen in riders aged 40 and over. These rates underscore the increase in motorcycle rider fatalities in the over 40 age groups seen in previous sections. Chart 20 shows 10 year trends of motorcycle rider fatality rates by age group per 100,000 U.S. resident population.

Table 25: Motorcycle Rider Fatality Rate by Age Group Per 100,000 U.S. Resident Population and Year

| Year | Rider Age Group | | | | | | Total |
|------|-----------------|-------|-------|-------|-------|------|-------|
| | < 20 | 20-29 | 30-39 | 40-49 | 50-59 | 59+ | |
| 1995 | 0.26 | 2.46 | 1.31 | 0.95 | 0.53 | 0.13 | 0.85 |
| 1996 | 0.26 | 2.09 | 1.27 | 1.07 | 0.60 | 0.16 | 0.81 |
| 1997 | 0.22 | 1.91 | 1.28 | 1.02 | 0.77 | 0.20 | 0.79 |
| 1998 | 0.26 | 1.99 | 1.43 | 1.17 | 0.71 | 0.19 | 0.85 |
| 1999 | 0.18 | 2.10 | 1.45 | 1.37 | 0.98 | 0.26 | 0.91 |
| 2000 | 0.23 | 2.13 | 1.64 | 1.58 | 1.11 | 0.33 | 1.03 |
| 2001 | 0.26 | 2.39 | 1.86 | 1.67 | 1.17 | 0.32 | 1.12 |
| 2002 | 0.22 | 2.21 | 1.83 | 1.74 | 1.47 | 0.38 | 1.14 |
| 2003 | 0.28 | 2.38 | 1.99 | 2.02 | 1.65 | 0.44 | 1.27 |
| 2004 | 0.30 | 2.56 | 2.09 | 2.14 | 1.79 | 0.47 | 1.36 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF)
Population Data – Census Bureau



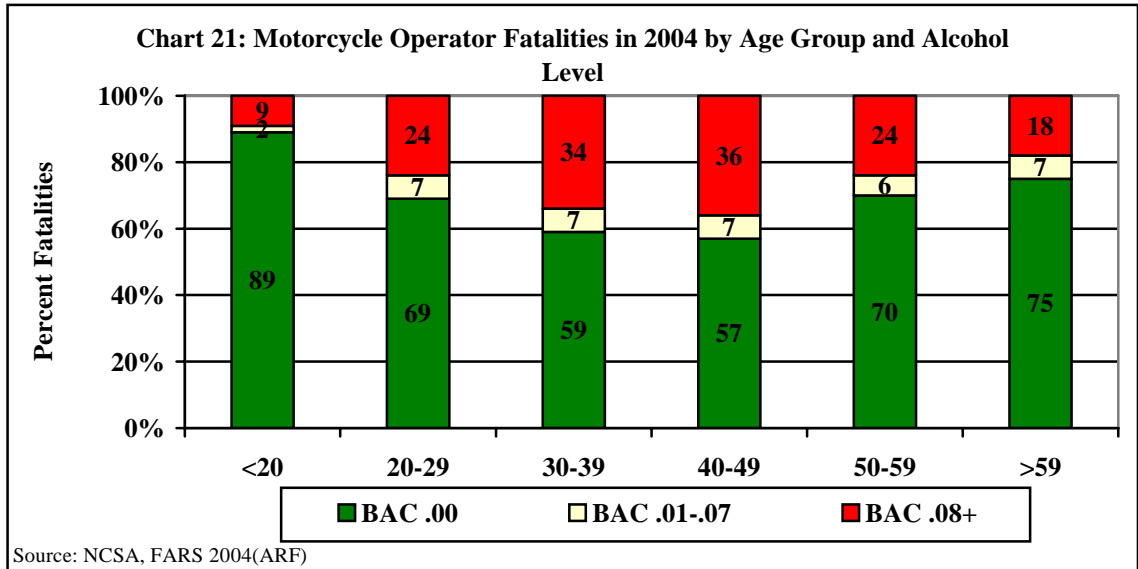
Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF), Population Data – Census Bureau

4.3. Common Crash Characteristics

After looking at motorcycle rider fatality trend data in the past 10 years by different variables, the two variables that stand out in terms of change in trend are motorcycle rider age and motorcycle engine size. Our analysis, in this section is based on 2004 data and focuses on the two variables mentioned above and on some of the common characteristics relating to motorcycle crashes. The data tables for the analysis in this section are provided in Appendix A.

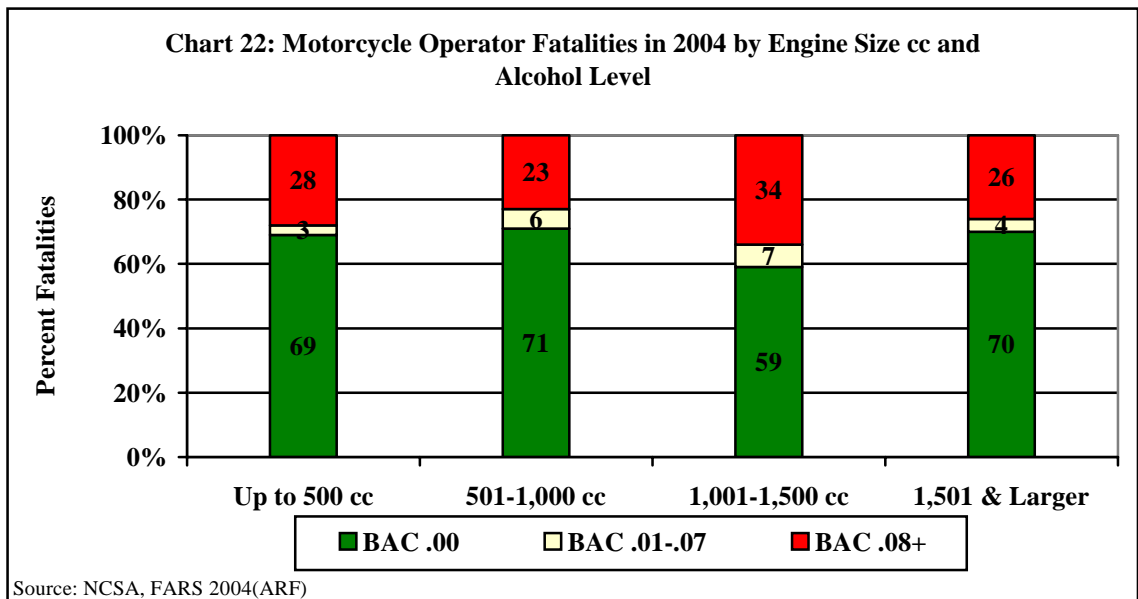
4.3.1. Motorcycle Operator Fatalities by Age Group and Alcohol Involvement

Among the motorcycle operators killed in 2004, a high percentage of alcohol involvement was noticed in the age groups of 40-49 and 30-39. Of all the operators killed with a BAC level of .08 or higher, nearly 60 percent were in the 30-39 and 40-49 age groups. Chart 21 shows motorcycle operator fatalities in 2004 by age group and their alcohol level.



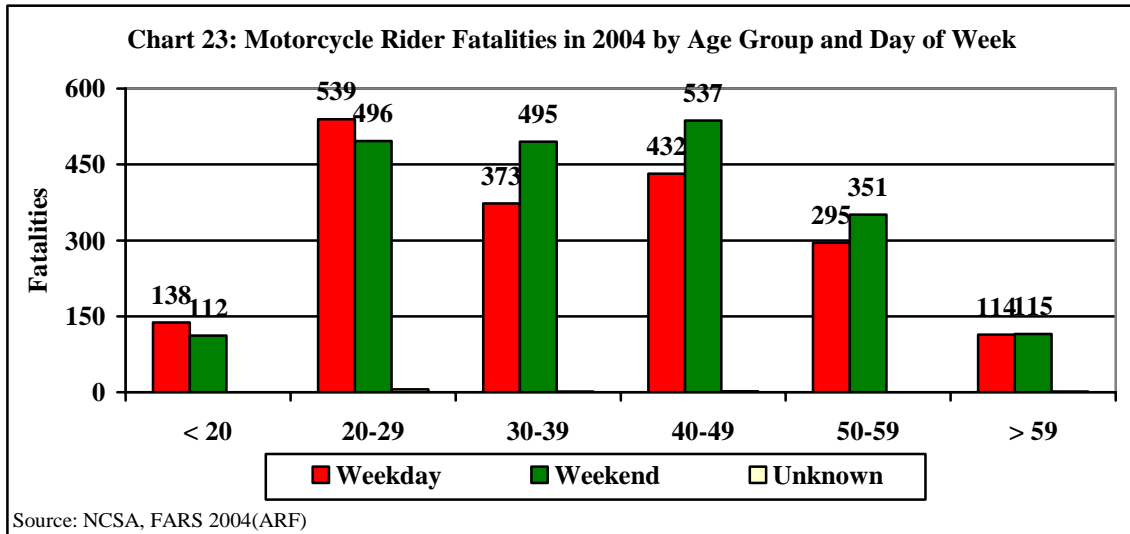
4.3.2. Motorcycle Operator Fatalities by Engine Size cc and Alcohol Involvement

Chart 22 shows motorcycle operator fatalities in 2004 by motorcycle engine size and alcohol level. Highest alcohol involvement among fatal motorcycle operators was seen in the 1,001-1,500 cc engine sizes. Alcohol involvement was least for motorcycle operators killed in the 501-1,000 cc engine size.



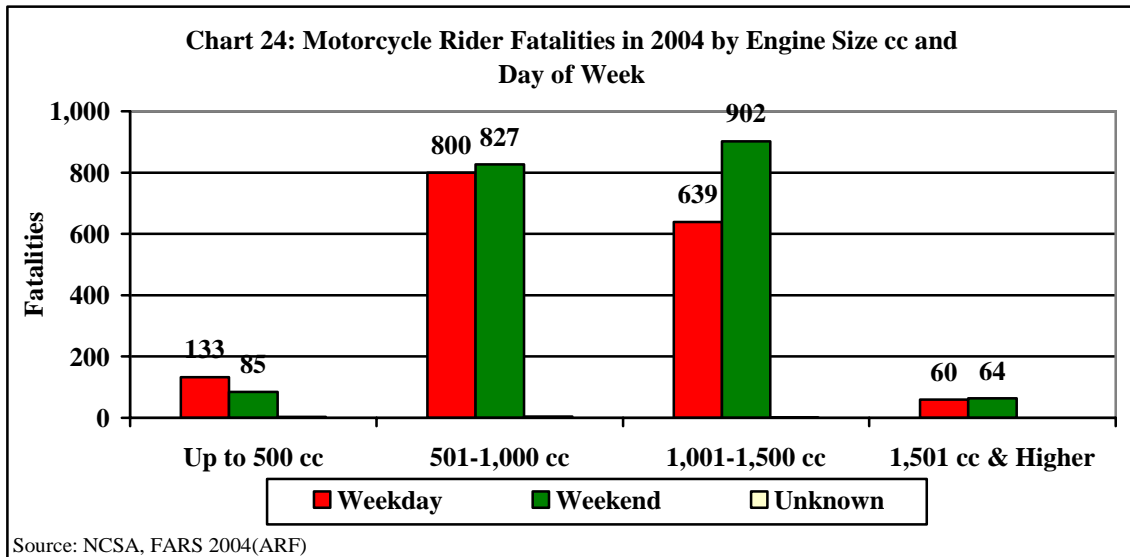
4.3.3. Motorcycle Rider Fatalities by Age Group and Day of Week

Motorcycle rider fatalities in 2004 during weekdays were higher for the under 30 age groups. However, for the 30 and above age groups there were more fatalities during weekends than weekdays. Based on the time definition of weekday/weekend in the trends section, in the 30 and above age groups there were 2.5 times as many fatalities during weekends than during weekdays. Chart 23 shows motorcycle rider fatalities in 2004 by age groups and day of week.



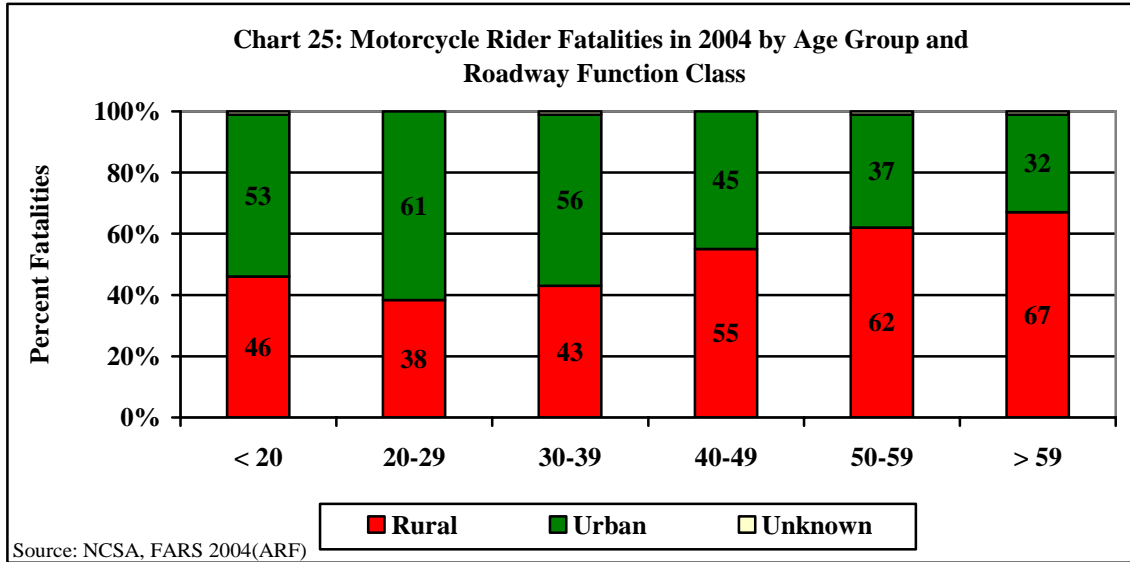
4.3.4. Motorcycle Rider Fatalities by Engine Size cc and Day of Week

Among motorcycle rider fatalities in 2004, weekday fatalities were higher for riders in the below 500 cc engine sizes and weekend fatalities were higher for riders in the 1,001-1,500 cc engine sizes. Based on the definition of weekday/weekend, there were nearly 3 times as many fatalities during weekends involving 1,001-1,500 cc engine motorcycles than during weekdays. Chart 24 shows motorcycle rider fatalities in 2004 by engine size and day of week.



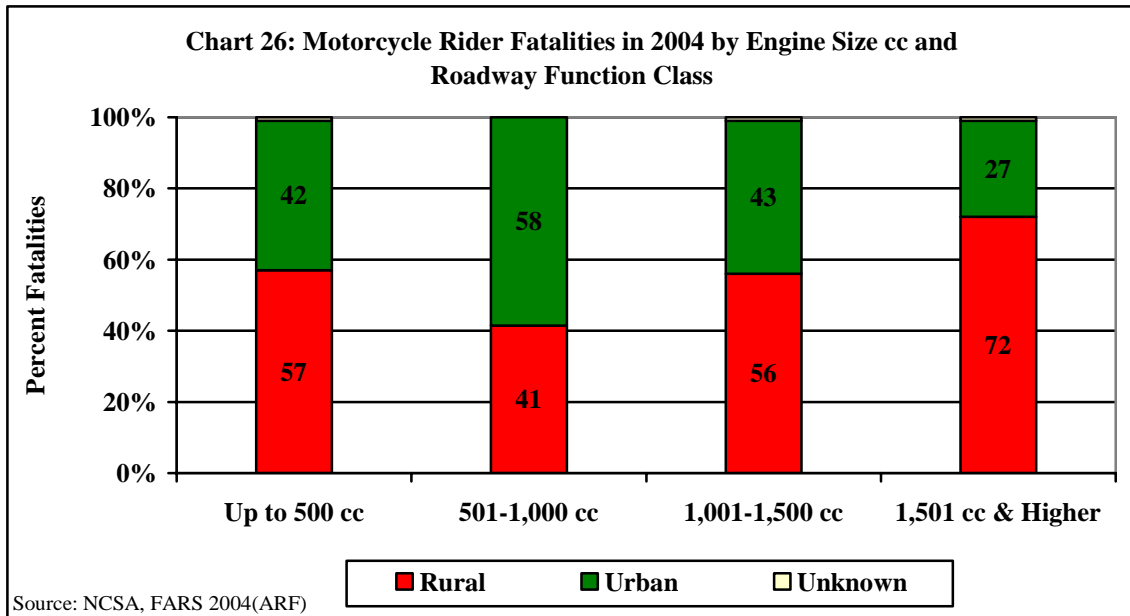
4.3.5. Motorcycle Rider Fatalities by Age Group and Roadway Function Class

Motorcycle rider fatalities in 2004 in the under 40 age group was seen more on urban roadways and in the 40 and above age group was more on rural roadways. Majority of the fatally injured motorcycle riders on rural roadways are age 40 and older which could indicate leisure riding among 40-year-old and older riders. Chart 25 shows motorcycle rider fatalities by age group and roadway function class.



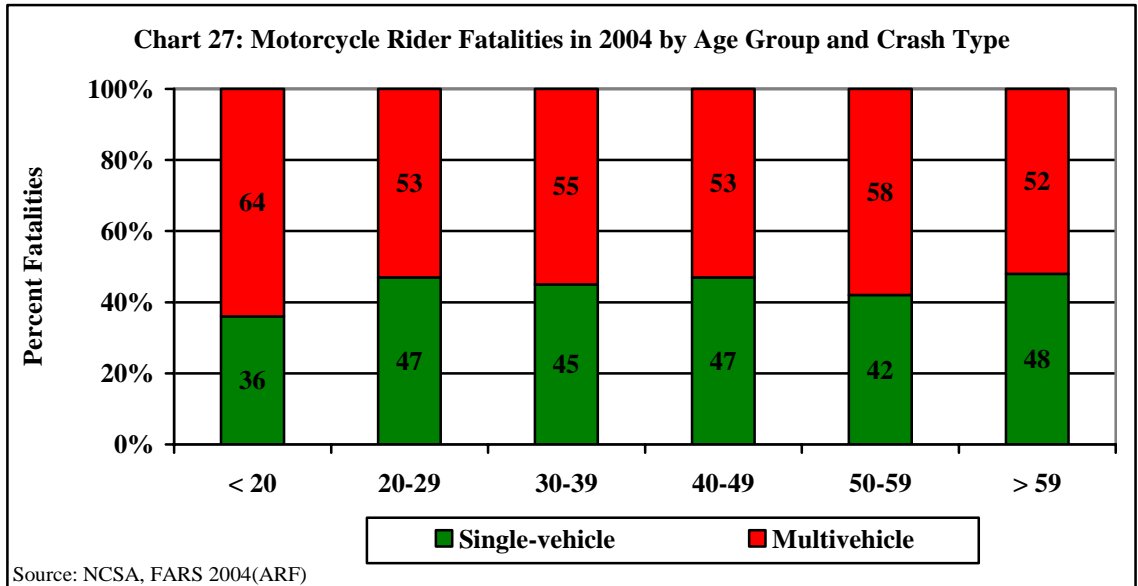
4.3.6. Motorcycle Rider Fatalities by Engine Size cc and Roadway Function Class

A majority of the motorcycle rider fatalities on urban roadways were seen mostly involving motorcycles with engine sizes between 501-1,000 cc. A majority of the motorcycle rider fatalities for other engine sizes were on rural roadways. Chart 26 shows motorcycle rider fatalities in 2004 by engine size and roadway function class.



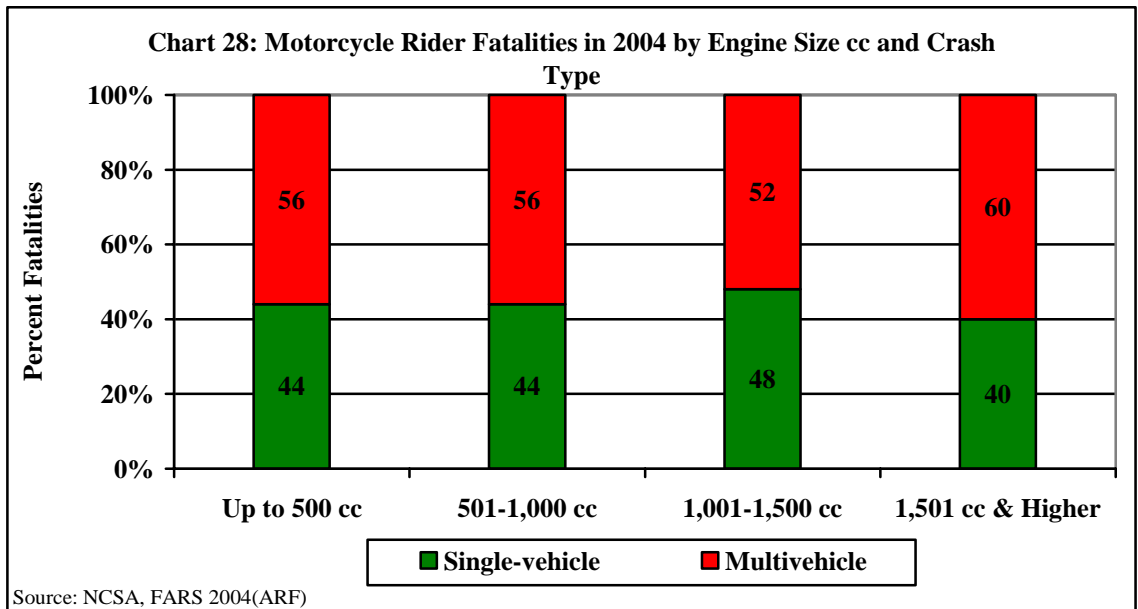
4.3.7. Motorcycle Rider Fatalities by Age Group and Crash Type

In 2004, nearly two-thirds of the motorcycle rider fatalities in the under 20 age group were in multivehicle crashes. Among the motorcycle rider fatalities in single vehicle crashes a higher percentage were in the over 59 age group. Chart 27 shows motorcycle rider fatalities in 2004 by age group and crash type.



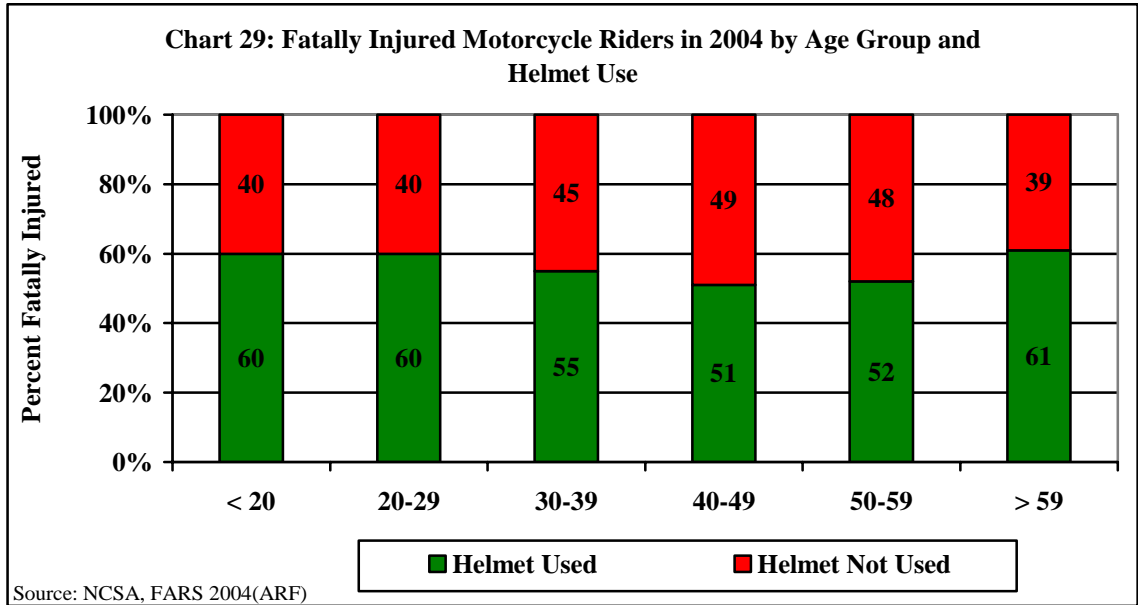
4.3.8. Motorcycle Rider Fatalities by Engine Size cc and Crash Type

Among all the engine size groups in 2004, motorcycle rider fatalities involving 1,501 cc and higher engine sizes were higher in multivehicle crashes. The proportion of multivehicle to single-vehicle fatalities for all engine sizes is similar to the overall trend. Chart 28 shows motorcycle rider fatalities by engine size and crash type.



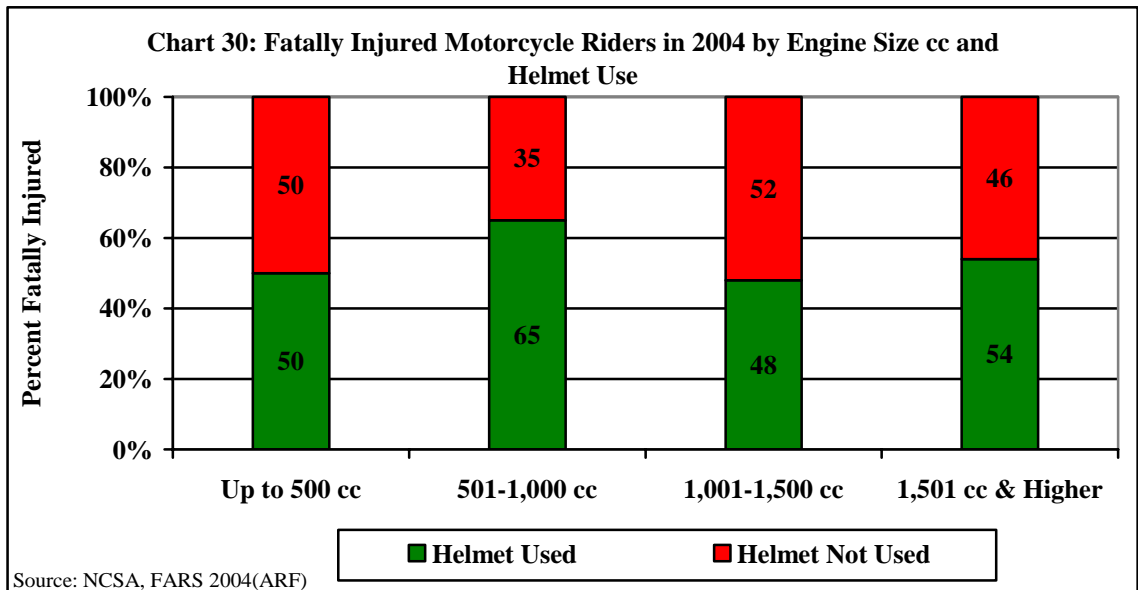
4.3.9. Fatally Injured Motorcycle Riders by Age Group and Helmet Use

Among all age groups, helmet use among fatally injured motorcycle riders in 2004 was higher in the under 30 and over 59 age groups and lower for 30-59 age group. Chart 29 shows fatally injured motorcycle riders by age group and helmet use.



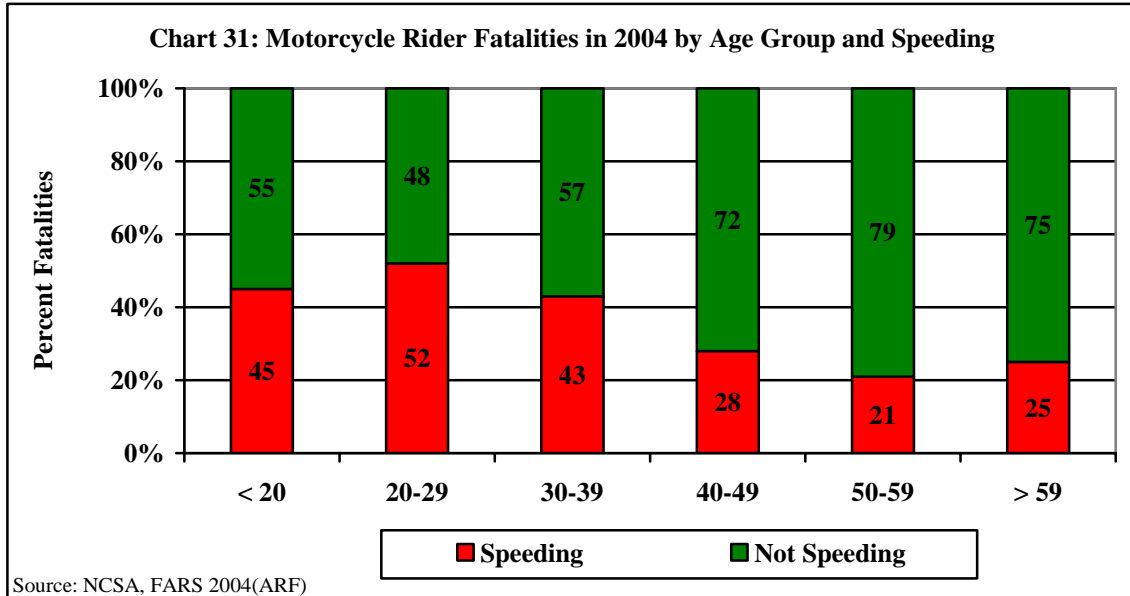
4.3.10. Fatally Injured Motorcycle Riders by Engine Size cc and Helmet Use

Among fatally injured motorcycle riders in 2004, helmet use was highest for the 501-1,000 cc engine size group. Helmet use was about two-thirds among the 501-1,000 cc engine size motorcycle riders compared to nearly 50 percent among riders in the other engine sizes. Chart 30 shows fatally injured motorcycle riders in 2004 by engine size and helmet use.



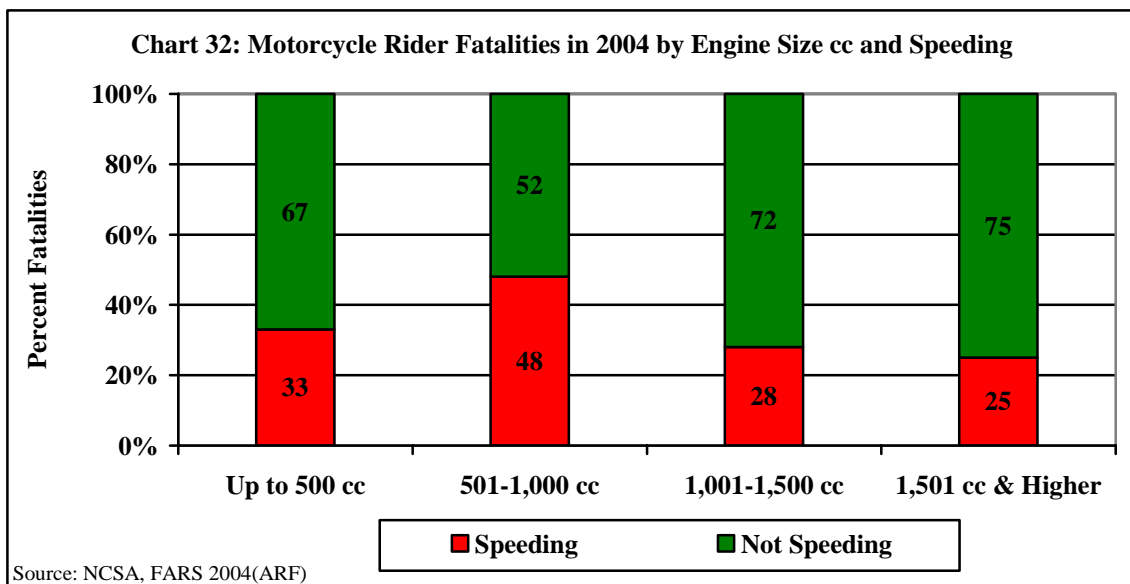
4.3.11. Motorcycle Rider Fatalities by Age Group and Speeding

Among the motorcycle riders who were fatally injured in 2004 in crashes when speeding was a contributing factor, higher percentages were in the under 40 age group. The highest percentage of speeding-related motorcycle rider fatalities was in the age group of 20-29 followed by the under 20 age group. Chart 31 shows motorcycle rider fatalities by age group and speeding.



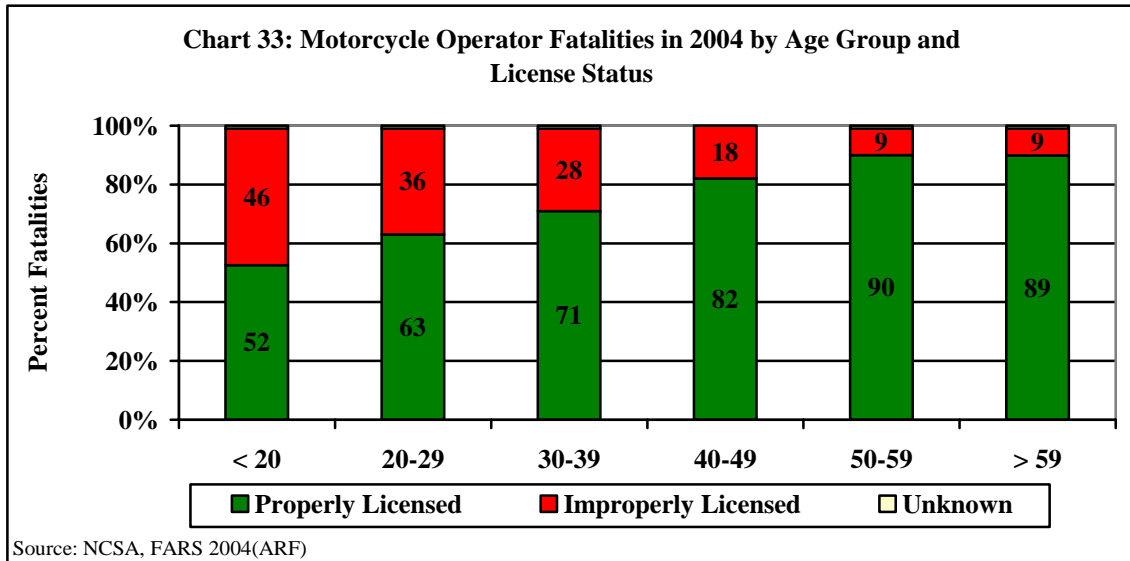
4.3.12. Motorcycle Rider Fatalities by Engine Size cc and Speeding

In 2004, a higher percentage of speeding-related motorcycle rider fatalities were seen involving 501-1,000 cc engine size motorcycles. Speeding was less among motorcycle rider fatalities involving 1,001-1,500 cc engine sizes. Chart 32 shows motorcycle rider fatalities by engine size and speeding.



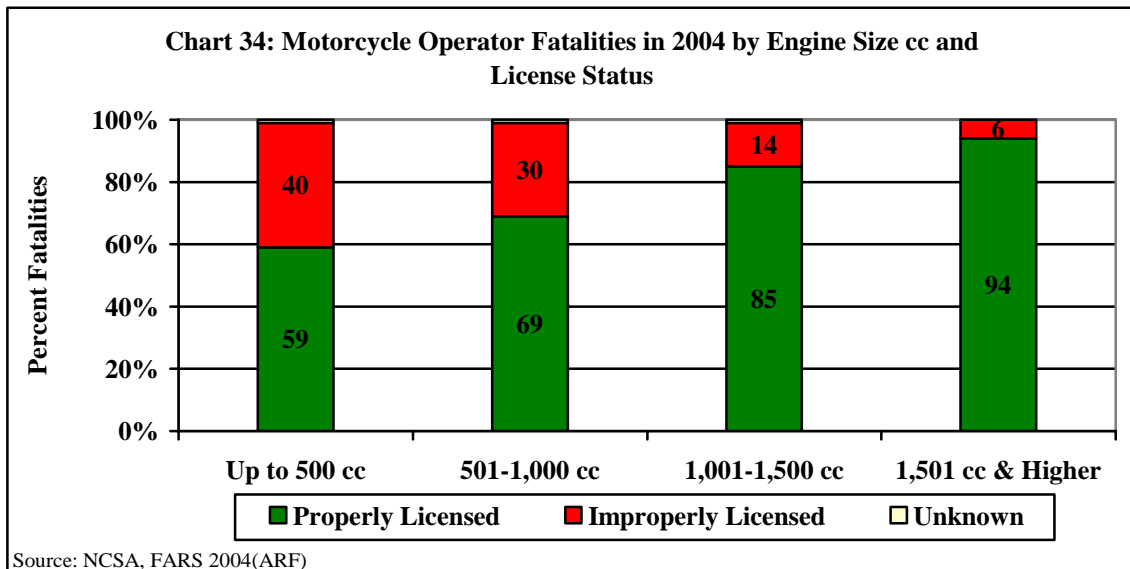
4.3.13. Motorcycle Operator Fatalities by Age Group and License Status

Among motorcycle operators fatally injured in crashes in 2004 a higher percentage of improperly licensed operators were in the under 20 age group. The percentage of properly licensed drivers was higher in all other age groups with the highest being in the above 50 age group category. The proportion of properly licensed operators increases with the increase in age group of the operator. Chart 33 shows motorcycle operator fatalities by age group and license status.



4.3.14. Motorcycle Operator Fatalities by Engine Size cc and License Status

Among motorcycle operators fatally injured in crashes in 2004 a higher proportion of improperly licensed operators were in the 500 cc and below engine category. Increases in properly licensed motorcycle operators were seen with the increase in motorcycle engine size. Chart 34 shows motorcycle operator fatalities in 2004 by engine size cc and motorcycle operator license status.



5. FINDINGS

The findings in this report are divided in two categories: 1) findings based on trends in the past ten years in motorcycle rider fatalities from FARS, motorcycle sales data from MIC, population data from the U.S. Census Bureau, and VMT and registration data from FHWA, and 2) findings based on common crash characteristics in motorcycle rider fatalities from FARS 2004 data. If the patterns seen in the analyses continue as seen from the combination of data sources, there is the likelihood that the increase in motorcycle rider fatalities will continue in the future years also.

5.1 Exposure

Motorcycle registration data from the Federal Highway Administration (FHWA) show a greater number of registered motorcycles. Data from the Motorcycle Industry Council (MIC) show increasing sales in the number of new On-highway motorcycles. According to MIC, the majority of new motorcycles sold are with large engine sizes. MIC data also show an increase in motorcycle ownership in the 40 and above age group. Data from the U.S. Census Bureau show, among all ages, greater increases in the U.S. resident population in the 40 and above age group.

5.2 Trends

- FARS data show increases in motorcycle rider fatalities in the age group of 40 and above in the last 10 years. Among all the age groups, the 20-29 age group had the largest number of motorcycle rider fatalities. Motorcycle rider fatalities in the 40-49 age group are fast approaching the number of fatalities in the 20-29 age group.
- The mean age of motorcycle riders killed and the mean engine size of motorcycles involved in fatal crashes are increasing. The mean age of motorcycle riders killed has increased to 38, an increase of nearly 6 years, indicating more involvement of older riders (in the 40 and above age group). The mean engine size of motorcycles involved in crashes has increased indicating a greater number of motorcycles with larger engine sizes being driven.
- FARS data show a greater number of motorcycle rider fatalities involving a motorcycle with a larger engine size. Most of the increases in motorcycle rider fatalities were seen in the 1,001-1,500 cc engine size, once again indicating more motorcycles with larger engine sizes being driven.
- Although the number of motorcycle rider fatalities in single and multivehicle crashes has increased over the ten-year period, the proportion of motorcycle rider fatalities in single-vehicle to multivehicle crashes does not indicate any significant variation.
- The percentage of properly licensed motorcycle operator fatalities in fatal crashes has increased during the past ten years, yet about one-fourth of fatally injured motorcycle operators, are still improperly licensed.

- Helmet use among fatally injured motorcycle riders in crashes has remained the same, at just above 50 percent. In 2004, about two-thirds (66%) of the fatally injured motorcycle riders in States without universal helmet laws were not wearing helmets compared to 15 percent in States with universal helmet laws.
- The percentage of motorcycle rider fatalities during weekdays and weekends has remained almost the same in the past ten years. However, motorcycle rider fatalities during weekends are twice the fatalities during weekdays which might indicate more recreational use of motorcycles during weekends.
- Though motorcycle rider fatalities have increased steadily in both rural and urban areas during the last ten years, the proportion of motorcycle rider fatalities in both areas has remained almost the same.
- Analysis of data show that 70 percent of all fatalities occur on undivided roadways. The percentage of motorcycle rider fatalities occurring on different roadway types has remained the same in the past ten years.
- The percentage of speeding related motorcycle rider fatalities has declined in the past ten years but speeding still continues to be a contributing factor in about a third of the motorcycle rider fatalities.
- As a trend alcohol involvement among motorcycle operators has been declining over the last ten years, but still a majority of the motorcycle operators killed are intoxicated with a blood alcohol concentration (BAC) of .08 g/dL or higher. Motorcycle operators with high BAC continue to be a major problem.

5.3 Common Crash Characteristics

Two significant findings from the analysis were the increases in motorcycle rider fatalities among older (40 and over) age groups and larger (1,001-1,500 cc) engine sizes. The findings below based on crash characteristics are based on these two variables.

5.3.1. Age Group

- Nearly three-fourths (72 percent) of the motorcycle rider fatalities in the 40 and over age group were on larger engine size motorcycles.
- Alcohol involvement among motorcycle operators was highest among operators in the age group of 40-49 compared to all age groups.
- Speeding is one of the major contributing factors in motorcycle crashes, especially among motorcycle riders under the age of 30.

- A greater number of motorcycle rider fatalities in the 40 and above ages were seen on rural roadways.
- Among motorcycle operators of all ages, the percentage of properly licensed operators increased with increase in operator age.
- Helmet use among fatally injured motorcycle riders was just above 50 percent among those aged 30-59, compared to 60 percent in the other age groups.
- Motorcycle rider fatalities in the above 30 age groups during weekends were more than twice as high as during weekdays.

5.3.2. Engine Size

- Alcohol involvement among motorcycle operators was highest among operators riding 1,001-1,500 cc engine size motorcycles.
- Speeding related motorcycle rider fatalities was higher in 501-1,000 cc engine size motorcycles.
- A greater number of motorcycle rider fatalities involving 1,001-1,500 cc engine size motorcycles were seen on rural roadways.
- An increase in the percentage of properly licensed motorcycle operators was seen with the increase in motorcycle engine size.
- Helmet use among fatally injured motorcycle riders was higher for motorcycle riders on the 501-1,000 cc engine size compared to other engine sizes.
- Motorcycle rider fatalities were higher during weekends in the 1,001-1,500 cc engine size motorcycles.

6. APPENDIX A: Additional Data

The following sections provide additional data that were used in the analysis but not shown in the previous sections.

| Table 26: Motorcycle Operator Fatalities in 2004 by Age Group and Alcohol Level | | | | | | | | | |
|--|----------------|-----------|--------------------|----------|-----------------|-----------|-----------------|-----------|--------------|
| Age Group | BAC .00 | | BAC .01-.07 | | BAC .08+ | | BAC .01+ | | Total |
| | No. | % | No. | % | No. | % | No. | % | |
| < 20 | 194 | 89 | 5 | 2 | 19 | 9 | 24 | 11 | 218 |
| 20-29 | 675 | 69 | 68 | 7 | 232 | 24 | 299 | 31 | 974 |
| 30-39 | 475 | 58 | 58 | 7 | 278 | 34 | 337 | 42 | 812 |
| 40-49 | 502 | 57 | 59 | 7 | 314 | 36 | 373 | 43 | 875 |
| 50-59 | 423 | 70 | 36 | 6 | 142 | 24 | 178 | 30 | 601 |
| 59 + | 159 | 75 | 14 | 7 | 38 | 18 | 53 | 25 | 212 |
| Unknown | 1 | 50 | 0 | 0 | 1 | 50 | 1 | 50 | 1 |
| Total | 2,429 | 66 | 239 | 6 | 1,025 | 28 | 1,264 | 34 | 3,693 |

Source: NCSA, FARS 2004 (ARF)

| Table 27: Motorcycle Operator Fatalities in 2004 by Engine Size and Alcohol Level | | | | | | | | | |
|--|----------------|-----------|--------------------|----------|-----------------|-----------|-----------------|-----------|--------------|
| Engine Size | BAC .00 | | BAC .01-.07 | | BAC .08+ | | BAC .01+ | | Total |
| | No. | % | No. | % | No. | % | No. | % | |
| Up to 500 cc | 146 | 69 | 7 | 3 | 59 | 28 | 66 | 31 | 212 |
| 501-1,000 cc | 1,095 | 71 | 97 | 6 | 348 | 23 | 445 | 29 | 1,540 |
| 1,001-1,500 cc | 816 | 59 | 93 | 7 | 468 | 34 | 561 | 41 | 1,377 |
| 1,501 cc & Higher | 76 | 70 | 4 | 4 | 28 | 26 | 32 | 30 | 108 |
| Unknown | 297 | 65 | 37 | 8 | 122 | 27 | 159 | 35 | 456 |
| Total | 2,429 | 66 | 239 | 6 | 1,025 | 28 | 1,264 | 34 | 3,693 |

Source: NCSA, FARS 2004 (ARF)

Table 28: Motorcycle Rider Fatalities in 2004 by Age Group and Day of Week

| Age Group | Day of Week | | | | | | Total |
|--------------|--------------|-----------|--------------|-----------|-----------|----------|--------------|
| | Weekday | | Weekend | | Unknown | | |
| | No. | % | No. | % | No. | % | |
| < 20 | 138 | 55 | 112 | 45 | 0 | 0 | 250 |
| 20-29 | 539 | 52 | 496 | 48 | 6 | 1 | 1,041 |
| 30-39 | 373 | 43 | 495 | 57 | 1 | 0 | 869 |
| 40-49 | 432 | 44 | 537 | 55 | 2 | 0 | 971 |
| 50-59 | 295 | 46 | 351 | 54 | 0 | 0 | 646 |
| > 59 | 114 | 50 | 115 | 50 | 1 | 0 | 230 |
| Unknown | 0 | 0 | 1 | 100 | 0 | 0 | 1 |
| Total | 1,891 | 47 | 2,107 | 53 | 10 | 0 | 4,008 |

Source: NCSA, FARS 2004 (ARF)

Table 29: Motorcycle Rider Fatalities in 2004 by Engine Size and Day of Week

| Engine Size | Day of Week | | | | | | Total |
|-------------------|--------------|-----------|--------------|-----------|-----------|----------|--------------|
| | Weekday | | Weekend | | Unknown | | |
| | # | % | # | % | # | % | |
| Up to 500 cc | 133 | 60 | 85 | 38 | 3 | 1 | 221 |
| 501-1,000 cc | 800 | 49 | 827 | 51 | 4 | 0 | 1,631 |
| 1,001-1,500 cc | 639 | 41 | 902 | 58 | 1 | 0 | 1,542 |
| 1,501 cc & Higher | 60 | 48 | 64 | 52 | 0 | 0 | 124 |
| Unknown | 259 | 53 | 229 | 47 | 2 | 0 | 490 |
| Total | 1,891 | 47 | 2,107 | 53 | 10 | 0 | 4,008 |

Source: NCSA, FARS 2004 (ARF)

Table 30: Motorcycle Rider Fatalities by Age Group and Land Use in 2004

| Age Group | Land Use | | | | | | Total |
|-----------|----------|----|-------|-----|---------|---|-------|
| | Rural | | Urban | | Unknown | | |
| | No. | % | No. | % | No. | % | |
| < 20 | 116 | 46 | 132 | 53 | 2 | 1 | 250 |
| 20-29 | 398 | 38 | 640 | 61 | 3 | 0 | 1,041 |
| 30-39 | 376 | 43 | 485 | 56 | 8 | 1 | 869 |
| 40-49 | 535 | 55 | 433 | 45 | 3 | 0 | 971 |
| 50-59 | 403 | 62 | 239 | 37 | 4 | 1 | 646 |
| 59 + | 154 | 67 | 74 | 32 | 2 | 1 | 230 |
| Unknown | 0 | 0 | 1 | 100 | 0 | 0 | 1 |
| Total | 1,982 | 49 | 2,004 | 50 | 22 | 1 | 4,008 |

Source: NCSA, FARS 2004 (ARF)

Table 31: Motorcycle Rider Fatalities by Engine Size and Land Use in 2004

| Engine Size | Land Use | | | | | | Total |
|-------------------|----------|----|-------|----|---------|---|-------|
| | Rural | | Urban | | Unknown | | |
| | No. | % | No. | % | No. | % | |
| Up to 500 cc | 126 | 57 | 93 | 42 | 2 | 1 | 221 |
| 501-1,000 cc | 671 | 41 | 952 | 58 | 8 | 0 | 1,631 |
| 1,001-1,500 cc | 867 | 56 | 665 | 43 | 10 | 1 | 1,542 |
| 1,501 cc & Higher | 89 | 72 | 34 | 27 | 1 | 1 | 124 |
| Unknown | 229 | 47 | 260 | 53 | 1 | 0 | 490 |
| Total | 1,982 | 49 | 2,004 | 50 | 22 | 1 | 4,008 |

Source: NCSA, FARS 2004 (ARF)

Table 32: Motorcycle Rider Fatalities in 2004 by Age Group and Crash Type

| Age Group | Crash Type | | | | Total | |
|-----------|----------------|----|--------------|-----|-------|-----|
| | Single-vehicle | | Multivehicle | | | |
| | No. | % | No. | % | No. | % |
| < 20 | 89 | 36 | 161 | 64 | 250 | 100 |
| 20-29 | 486 | 47 | 555 | 53 | 1,041 | 100 |
| 30-39 | 395 | 45 | 474 | 55 | 869 | 100 |
| 40-49 | 459 | 47 | 512 | 53 | 971 | 100 |
| 50-59 | 269 | 42 | 377 | 58 | 646 | 100 |
| 59 + | 110 | 48 | 120 | 52 | 230 | 100 |
| Unknown | 0 | 0 | 1 | 100 | 1 | 100 |
| Total | 1,808 | 45 | 2,200 | 55 | 4,008 | 100 |

Source: NCSA, FARS 2004 (ARF)

Table 33: Motorcycle Rider Fatalities in 2004 by Engine Size and Crash Type

| Engine Size | Crash Type | | | | Total | |
|-------------------|----------------|----|--------------|----|-------|-----|
| | Single-vehicle | | Multivehicle | | | |
| | No. | % | No. | % | No. | % |
| Up to 500 cc | 97 | 44 | 124 | 56 | 221 | 100 |
| 501-1,000 cc | 711 | 44 | 920 | 56 | 1,631 | 100 |
| 1,001-1,500 cc | 739 | 48 | 803 | 52 | 1,542 | 100 |
| 1,501 cc & Higher | 49 | 40 | 75 | 60 | 124 | 100 |
| Unknown | 212 | 43 | 278 | 57 | 490 | 100 |
| Total | 1,808 | 45 | 2,200 | 55 | 4,008 | 100 |

Source: NCSA, FARS 2004 (ARF)

Table 34: Fatally Injured Motorcycle Riders in 2004 by Age Group and Helmet Use

| Age Group | Helmet Use | | | | Total | |
|-----------|------------|-----|-------|----|-------|-----|
| | Not Used | | Used | | | |
| | No. | % | No. | % | No. | % |
| < 20 | 100 | 40 | 150 | 60 | 250 | 100 |
| 20-29 | 419 | 40 | 622 | 60 | 1,041 | 100 |
| 30-39 | 393 | 45 | 476 | 55 | 869 | 100 |
| 40-49 | 479 | 49 | 492 | 51 | 971 | 100 |
| 50-59 | 313 | 48 | 333 | 52 | 646 | 100 |
| > 59 | 89 | 39 | 141 | 61 | 230 | 100 |
| Unknown | 1 | 100 | 0 | 0 | 1 | 100 |
| Total | 1,794 | 45 | 2,214 | 55 | 4,008 | 100 |

Source: NCSA, FARS 2004 (ARF)

Table 35: Fatally Injured Motorcycle Riders in 2004 by Engine Size and Helmet Use

| Engine Size | Helmet Use | | | | Total | |
|-------------------|------------|----|-------|----|-------|-----|
| | Not Used | | Used | | | |
| | No. | % | No. | % | No. | % |
| Up to 500 cc | 109 | 50 | 112 | 50 | 221 | 100 |
| 501-1,000 cc | 567 | 35 | 1,064 | 65 | 1,631 | 100 |
| 1,001-1,500 cc | 806 | 52 | 736 | 48 | 1,542 | 100 |
| 1,501 cc & Higher | 57 | 46 | 67 | 54 | 124 | 100 |
| Unknown | 254 | 52 | 236 | 48 | 490 | 100 |
| Total | 1,794 | 45 | 2,214 | 55 | 4,008 | 100 |

Source: NCSA, FARS 2004 (ARF)

Table 36: Motorcycle Rider Fatalities in 2004 by Age Group and Roadway Function Class

| Age Group | Roadway Function Class | | | | | | Total |
|-----------|------------------------|----|-------|-----|---------|---|-------|
| | Rural | | Urban | | Unknown | | |
| | No. | % | No. | % | No. | % | |
| < 20 | 116 | 46 | 132 | 53 | 2 | 1 | 250 |
| 20-29 | 398 | 38 | 640 | 61 | 3 | 0 | 1,041 |
| 30-39 | 376 | 43 | 485 | 56 | 8 | 1 | 869 |
| 40-49 | 535 | 55 | 433 | 45 | 3 | 0 | 971 |
| 50-59 | 403 | 62 | 239 | 37 | 4 | 1 | 646 |
| 59+ | 154 | 67 | 74 | 32 | 2 | 1 | 230 |
| Unknown | 0 | 0 | 1 | 100 | 0 | 0 | 1 |
| Total | 1,982 | 49 | 2,004 | 50 | 22 | 1 | 4,008 |

Source: NCSA, FARS 2004 (ARF)

Table 37: Motorcycle Rider Fatalities in 2004 by Engine Size and Roadway Function Class

| Engine Size | Roadway Function Class | | | | | | Total |
|-------------------|------------------------|----|-------|----|---------|---|-------|
| | Rural | | Urban | | Unknown | | |
| | No. | % | No. | % | No. | % | |
| Up to 500 cc | 126 | 57 | 93 | 42 | 2 | 1 | 221 |
| 501-1,000 cc | 671 | 41 | 952 | 58 | 8 | 0 | 1,631 |
| 1,001-1,500 cc | 867 | 56 | 665 | 43 | 10 | 1 | 1,542 |
| 1,501 cc & Higher | 89 | 72 | 34 | 27 | 1 | 1 | 124 |
| Unknown | 229 | 47 | 260 | 53 | 1 | 0 | 490 |
| Total | 1,982 | 49 | 2,004 | 50 | 22 | 1 | 4,008 |

Source: NCSA, FARS 2004 (ARF)

Table 38: Motorcycle Rider Fatalities in 2004 by Age Group and Speeding

| Age Group | Speeding Related | | | | Total | |
|-----------|------------------|-----|--------------|----|-------|-----|
| | Speeding | | Not Speeding | | | |
| | No. | % | No. | % | No. | % |
| < 20 | 113 | 45 | 137 | 55 | 250 | 100 |
| 20-29 | 541 | 52 | 500 | 48 | 1,041 | 100 |
| 30-39 | 374 | 43 | 495 | 57 | 869 | 100 |
| 40-49 | 274 | 28 | 697 | 72 | 971 | 100 |
| 50-59 | 137 | 21 | 509 | 79 | 646 | 100 |
| > 59 | 57 | 25 | 173 | 75 | 230 | 100 |
| Unknown | 1 | 100 | 0 | 0 | 1 | 100 |
| Total | 1,497 | 37 | 2,511 | 63 | 4,008 | 100 |

Source: NCSA, FARS 2004 (ARF)

Table 39: Motorcycle Rider Fatalities in 2004 by Engine Size and Speeding

| Engine Size | Speeding Related | | | | Total | |
|-------------------|------------------|----|--------------|----|-------|-----|
| | Speeding | | Not Speeding | | | |
| | No. | % | No. | % | No. | % |
| Up to 500 cc | 73 | 33 | 148 | 67 | 221 | 100 |
| 501-1,000 cc | 789 | 48 | 842 | 52 | 1,631 | 100 |
| 1,001-1,500 cc | 432 | 28 | 1,110 | 72 | 1,542 | 100 |
| 1,501 cc & Higher | 31 | 25 | 93 | 75 | 124 | 100 |
| Unknown | 172 | 35 | 318 | 65 | 490 | 100 |
| Total | 1,497 | 37 | 2,511 | 63 | 4,008 | 100 |

Source: NCSA, FARS 2004 (ARF)

Table 40: Motorcycle Operator Fatalities in 2004 by Age Group, License Status, and License Compliance

| Age Group | License Status | | | | | | Total | |
|-----------|-------------------|----|---------------------|----|---------|-----|-------|-----|
| | Properly Licensed | | Improperly Licensed | | Unknown | | | |
| | # | % | # | % | # | % | # | % |
| < 20 | 114 | 52 | 101 | 46 | 3 | 1 | 218 | 100 |
| 20-29 | 616 | 63 | 353 | 36 | 5 | 1 | 974 | 100 |
| 30-39 | 575 | 71 | 228 | 28 | 9 | 1 | 812 | 100 |
| 40-49 | 717 | 82 | 154 | 18 | 4 | 0 | 875 | 100 |
| 50-59 | 542 | 90 | 53 | 9 | 6 | 1 | 601 | 100 |
| > 59 | 189 | 89 | 20 | 9 | 3 | 1 | 212 | 100 |
| Unknown | 0 | 0 | 0 | 0 | 1 | 100 | 1 | 100 |
| Total | 2,753 | 75 | 909 | 25 | 31 | 1 | 3,693 | 100 |

Source: NCSA, FARS 2004 (ARF)

Table 41: Motorcycle Operator Fatalities in 2004 by Engine Size, License Status, and License Compliance

| Engine Size | License Status | | | | | | Total | |
|-------------------|-------------------|----|---------------------|----|---------|---|-------|---|
| | Properly Licensed | | Improperly Licensed | | Unknown | | | |
| | # | % | # | % | # | % | # | % |
| Up to 500 cc | 126 | 59 | 84 | 40 | 2 | 1 | 212 | |
| 501-1,000 cc | 1,069 | 69 | 463 | 30 | 8 | 1 | 1,540 | |
| 1,001-1,500 cc | 1,174 | 85 | 187 | 14 | 16 | 1 | 1,377 | |
| 1,501 cc & Higher | 101 | 94 | 7 | 6 | 0 | 0 | 108 | |
| Unknown | 283 | 62 | 168 | 37 | 5 | 1 | 456 | |
| Total | 2,753 | 75 | 909 | 25 | 31 | 1 | 3,693 | |

Source: NCSA, FARS 2004 (ARF)

Table 42: Motorcycle Rider Fatalities by State from 1975-1989

| State | Calendar Year | | | | | | | | | | | | | | |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
| Alabama | 42 | 59 | 65 | 67 | 55 | 54 | 56 | 53 | 58 | 52 | 61 | 72 | 39 | 39 | 34 |
| Alaska | 10 | 9 | 13 | 16 | 10 | 6 | 8 | 6 | 14 | 10 | 5 | 8 | 1 | 6 | 8 |
| Arizona | 63 | 53 | 77 | 87 | 135 | 121 | 119 | 84 | 103 | 116 | 112 | 104 | 89 | 99 | 76 |
| Arkansas | 26 | 29 | 31 | 28 | 38 | 43 | 41 | 26 | 47 | 31 | 37 | 31 | 40 | 30 | 23 |
| California | 493 | 598 | 684 | 785 | 865 | 821 | 783 | 695 | 666 | 860 | 804 | 877 | 754 | 609 | 639 |
| Colorado | 46 | 33 | 61 | 64 | 78 | 69 | 86 | 76 | 69 | 73 | 71 | 50 | 62 | 50 | 38 |
| Connecticut | 39 | 55 | 55 | 76 | 89 | 116 | 86 | 100 | 84 | 91 | 89 | 65 | 69 | 63 | 53 |
| Delaware | 8 | 9 | 4 | 8 | 13 | 14 | 8 | 18 | 10 | 7 | 18 | 6 | 14 | 11 | 4 |
| Dist of Columbia | 7 | 4 | 4 | 5 | 4 | 3 | 8 | 4 | 7 | 7 | 5 | 5 | 3 | 6 | 4 |
| Florida | 155 | 144 | 180 | 227 | 249 | 265 | 243 | 240 | 238 | 314 | 277 | 272 | 242 | 223 | 212 |
| Georgia | 66 | 64 | 86 | 88 | 105 | 118 | 109 | 116 | 90 | 91 | 89 | 87 | 67 | 63 | 65 |
| Hawaii | 9 | 6 | 12 | 24 | 22 | 11 | 18 | 18 | 21 | 20 | 11 | 16 | 14 | 17 | 17 |
| Idaho | 22 | 19 | 21 | 25 | 35 | 34 | 25 | 21 | 24 | 27 | 30 | 27 | 27 | 29 | 25 |
| Illinois | 174 | 175 | 207 | 228 | 205 | 226 | 204 | 188 | 181 | 173 | 181 | 182 | 161 | 178 | 128 |
| Indiana | 85 | 81 | 96 | 121 | 157 | 136 | 121 | 108 | 104 | 85 | 106 | 131 | 129 | 89 | 69 |
| Iowa | 62 | 67 | 69 | 72 | 84 | 77 | 79 | 69 | 60 | 45 | 57 | 58 | 63 | 61 | 44 |
| Kansas | 38 | 44 | 51 | 52 | 55 | 60 | 72 | 50 | 42 | 47 | 33 | 38 | 40 | 43 | 25 |
| Kentucky | 53 | 45 | 45 | 50 | 63 | 45 | 53 | 50 | 49 | 49 | 48 | 49 | 44 | 43 | 23 |
| Louisiana | 49 | 65 | 90 | 102 | 82 | 120 | 130 | 91 | 91 | 67 | 74 | 63 | 42 | 50 | 37 |
| Maine | 18 | 19 | 25 | 25 | 30 | 34 | 32 | 30 | 30 | 33 | 22 | 22 | 22 | 19 | 17 |
| Maryland | 53 | 47 | 49 | 67 | 64 | 100 | 89 | 76 | 66 | 76 | 66 | 82 | 60 | 57 | 39 |
| Massachusetts | 71 | 68 | 89 | 93 | 97 | 110 | 77 | 65 | 75 | 83 | 86 | 65 | 58 | 59 | 64 |
| Michigan | 161 | 133 | 156 | 168 | 124 | 148 | 145 | 114 | 113 | 150 | 137 | 118 | 118 | 82 | 73 |
| Minnesota | 61 | 59 | 92 | 107 | 99 | 121 | 97 | 72 | 74 | 66 | 81 | 71 | 52 | 61 | 39 |
| Mississippi | 10 | 27 | 31 | 37 | 21 | 27 | 42 | 50 | 44 | 50 | 29 | 29 | 33 | 18 | 24 |
| Missouri | 63 | 80 | 80 | 68 | 72 | 84 | 66 | 68 | 63 | 73 | 58 | 55 | 54 | 64 | 46 |
| Montana | 12 | 20 | 9 | 22 | 21 | 24 | 24 | 18 | 24 | 27 | 34 | 15 | 25 | 18 | 16 |
| Nebraska | 21 | 27 | 30 | 30 | 32 | 35 | 34 | 27 | 26 | 25 | 26 | 24 | 33 | 19 | 13 |
| Nevada | 10 | 25 | 17 | 30 | 36 | 39 | 17 | 22 | 19 | 14 | 20 | 19 | 23 | 26 | 21 |
| New Hampshire | 16 | 17 | 27 | 27 | 35 | 33 | 25 | 21 | 19 | 16 | 33 | 29 | 27 | 20 | 23 |
| New Jersey | 41 | 52 | 85 | 81 | 89 | 85 | 101 | 90 | 76 | 72 | 61 | 71 | 51 | 54 | 31 |
| New Mexico | 24 | 27 | 29 | 52 | 51 | 65 | 46 | 47 | 56 | 49 | 47 | 49 | 35 | 40 | 31 |
| New York | 126 | 145 | 215 | 182 | 198 | 229 | 208 | 188 | 207 | 173 | 202 | 195 | 189 | 175 | 140 |
| North Carolina | 71 | 72 | 79 | 87 | 105 | 93 | 98 | 91 | 66 | 109 | 110 | 110 | 97 | 81 | 57 |
| North Dakota | 9 | 6 | 14 | 10 | 12 | 15 | 14 | 18 | 15 | 7 | 8 | 7 | 7 | 8 | 1 |
| Ohio | 144 | 149 | 187 | 219 | 255 | 237 | 202 | 206 | 187 | 214 | 203 | 217 | 199 | 155 | 162 |
| Oklahoma | 56 | 53 | 71 | 73 | 80 | 88 | 93 | 80 | 64 | 67 | 79 | 60 | 44 | 51 | 44 |
| Oregon | 37 | 42 | 71 | 67 | 67 | 80 | 68 | 62 | 56 | 63 | 69 | 79 | 72 | 48 | 45 |
| Pennsylvania | 150 | 112 | 162 | 172 | 178 | 194 | 165 | 151 | 148 | 171 | 165 | 160 | 148 | 132 | 113 |
| Rhode Island | 10 | 18 | 21 | 13 | 12 | 16 | 14 | 19 | 20 | 7 | 15 | 20 | 18 | 14 | 15 |
| South Carolina | 54 | 46 | 53 | 38 | 46 | 58 | 54 | 71 | 86 | 97 | 83 | 65 | 59 | 61 | 54 |
| South Dakota | 13 | 10 | 18 | 13 | 22 | 18 | 15 | 13 | 12 | 9 | 15 | 10 | 14 | 13 | 14 |
| Tennessee | 79 | 61 | 86 | 77 | 63 | 84 | 95 | 80 | 85 | 98 | 89 | 95 | 86 | 68 | 60 |
| Texas | 202 | 182 | 264 | 318 | 347 | 375 | 437 | 401 | 350 | 362 | 369 | 404 | 290 | 299 | 243 |
| Utah | 21 | 16 | 24 | 23 | 30 | 44 | 42 | 31 | 28 | 38 | 33 | 29 | 33 | 28 | 23 |
| Vermont | 10 | 7 | 9 | 13 | 11 | 18 | 10 | 11 | 5 | 10 | 11 | 5 | 12 | 5 | 7 |
| Virginia | 53 | 62 | 65 | 74 | 62 | 84 | 92 | 58 | 68 | 70 | 107 | 91 | 66 | 67 | 36 |
| Washington | 53 | 60 | 74 | 113 | 119 | 117 | 101 | 107 | 77 | 72 | 80 | 80 | 90 | 75 | 68 |
| West Virginia | 21 | 24 | 33 | 33 | 34 | 31 | 29 | 30 | 29 | 27 | 18 | 26 | 27 | 23 | 19 |
| Wisconsin | 63 | 81 | 67 | 109 | 123 | 108 | 108 | 113 | 103 | 101 | 90 | 110 | 89 | 100 | 70 |
| Wyoming | 9 | 6 | 21 | 11 | 15 | 11 | 17 | 10 | 16 | 14 | 10 | 13 | 5 | 13 | 9 |
| NATIONAL | 3,189 | 3,312 | 4,104 | 4,577 | 4,894 | 5,144 | 4,906 | 4,453 | 4,265 | 4,608 | 4,564 | 4,566 | 4,036 | 3,662 | 3,141 |
| Puerto Rico | N/A | N/A | N/A | 28 | N/A | 36 | 32 | 21 | 28 | 29 | 18 | 31 | 31 | 32 | 35 |

Source: NCSA, FARS 1975-1989 (Final)

Table 43: Motorcycle Rider Fatalities by State from 1990-2004

| State | Calendar Year | | | | | | | | | | | | | | |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Alabama | 30 | 38 | 34 | 32 | 31 | 33 | 31 | 29 | 34 | 32 | 43 | 43 | 43 | 52 | 74 |
| Alaska | 10 | 11 | 7 | 3 | 2 | 3 | 6 | 6 | 5 | 9 | 6 | 7 | 12 | 12 | 8 |
| Arizona | 78 | 60 | 64 | 66 | 66 | 65 | 69 | 57 | 60 | 73 | 90 | 73 | 94 | 109 | 119 |
| Arkansas | 32 | 23 | 22 | 21 | 25 | 17 | 25 | 19 | 28 | 22 | 27 | 38 | 38 | 56 | 57 |
| California | 583 | 515 | 325 | 310 | 295 | 260 | 232 | 235 | 204 | 236 | 276 | 299 | 324 | 383 | 432 |
| Colorado | 68 | 45 | 41 | 48 | 47 | 45 | 50 | 38 | 56 | 60 | 73 | 84 | 73 | 70 | 80 |
| Connecticut | 50 | 29 | 38 | 44 | 32 | 33 | 32 | 38 | 41 | 38 | 50 | 46 | 47 | 29 | 57 |
| Delaware | 10 | 7 | 14 | 8 | 6 | 6 | 10 | 8 | 6 | 7 | 5 | 10 | 7 | 11 | 8 |
| Dist of Columbia | 5 | 6 | 1 | 2 | 2 | 6 | 4 | 4 | 5 | 4 | 7 | 5 | 7 | 7 | 8 |
| Florida | 224 | 175 | 175 | 197 | 172 | 181 | 160 | 184 | 183 | 178 | 259 | 287 | 319 | 365 | 432 |
| Georgia | 63 | 60 | 56 | 52 | 55 | 44 | 47 | 56 | 66 | 59 | 61 | 95 | 85 | 103 | 111 |
| Hawaii | 20 | 18 | 16 | 26 | 29 | 21 | 20 | 14 | 21 | 17 | 18 | 18 | 24 | 19 | 21 |
| Idaho | 22 | 12 | 17 | 24 | 6 | 18 | 12 | 18 | 6 | 13 | 18 | 19 | 12 | 19 | 24 |
| Illinois | 152 | 111 | 104 | 115 | 148 | 101 | 109 | 83 | 99 | 103 | 126 | 140 | 100 | 143 | 157 |
| Indiana | 82 | 82 | 71 | 51 | 64 | 65 | 62 | 48 | 69 | 67 | 73 | 75 | 88 | 81 | 108 |
| Iowa | 37 | 40 | 29 | 38 | 30 | 43 | 17 | 28 | 28 | 30 | 32 | 39 | 41 | 51 | 37 |
| Kansas | 35 | 49 | 28 | 20 | 20 | 14 | 19 | 17 | 19 | 15 | 21 | 25 | 33 | 31 | 30 |
| Kentucky | 38 | 34 | 37 | 36 | 33 | 23 | 28 | 26 | 32 | 42 | 38 | 59 | 45 | 58 | 68 |
| Louisiana | 43 | 29 | 36 | 29 | 28 | 28 | 29 | 20 | 35 | 40 | 57 | 65 | 68 | 83 | 72 |
| Maine | 19 | 30 | 20 | 10 | 17 | 13 | 15 | 10 | 15 | 16 | 18 | 14 | 13 | 20 | 22 |
| Maryland | 45 | 49 | 56 | 45 | 29 | 26 | 25 | 26 | 35 | 44 | 50 | 53 | 51 | 56 | 69 |
| Massachusetts | 54 | 42 | 33 | 44 | 30 | 28 | 34 | 30 | 34 | 35 | 33 | 53 | 58 | 35 | 58 |
| Michigan | 87 | 85 | 57 | 58 | 72 | 83 | 61 | 63 | 56 | 83 | 86 | 97 | 87 | 81 | 81 |
| Minnesota | 51 | 42 | 28 | 34 | 47 | 36 | 42 | 25 | 41 | 30 | 37 | 42 | 47 | 64 | 52 |
| Mississippi | 25 | 15 | 15 | 12 | 16 | 15 | 10 | 13 | 18 | 18 | 22 | 30 | 26 | 42 | 40 |
| Missouri | 50 | 41 | 44 | 30 | 41 | 40 | 35 | 37 | 28 | 37 | 44 | 53 | 60 | 90 | 56 |
| Montana | 16 | 10 | 13 | 20 | 13 | 16 | 9 | 20 | 14 | 15 | 13 | 13 | 24 | 12 | 21 |
| Nebraska | 6 | 14 | 9 | 6 | 9 | 6 | 6 | 5 | 6 | 8 | 3 | 12 | 15 | 13 | 21 |
| Nevada | 22 | 18 | 19 | 15 | 20 | 23 | 19 | 24 | 13 | 17 | 21 | 21 | 35 | 26 | 52 |
| New Hampshire | 18 | 14 | 10 | 16 | 12 | 16 | 22 | 14 | 17 | 32 | 27 | 22 | 12 | 9 | 28 |
| New Jersey | 59 | 40 | 45 | 40 | 34 | 40 | 52 | 43 | 37 | 42 | 56 | 73 | 50 | 57 | 73 |
| New Mexico | 47 | 38 | 32 | 29 | 21 | 33 | 26 | 26 | 21 | 23 | 26 | 31 | 32 | 36 | 39 |
| New York | 143 | 124 | 119 | 115 | 88 | 92 | 96 | 114 | 111 | 113 | 119 | 147 | 141 | 154 | 150 |
| North Carolina | 79 | 71 | 68 | 86 | 68 | 76 | 72 | 62 | 83 | 106 | 98 | 109 | 123 | 108 | 134 |
| North Dakota | 8 | 9 | 5 | 7 | 2 | 6 | 5 | 3 | 3 | 3 | 4 | 4 | 1 | 4 | 9 |
| Ohio | 163 | 164 | 112 | 134 | 107 | 108 | 116 | 106 | 118 | 121 | 127 | 125 | 133 | 136 | 134 |
| Oklahoma | 43 | 37 | 30 | 34 | 31 | 40 | 25 | 33 | 25 | 33 | 24 | 39 | 39 | 43 | 78 |
| Oregon | 27 | 35 | 25 | 28 | 22 | 22 | 28 | 24 | 25 | 18 | 37 | 32 | 26 | 44 | 37 |
| Pennsylvania | 108 | 107 | 90 | 112 | 112 | 84 | 98 | 92 | 111 | 111 | 149 | 132 | 134 | 156 | 158 |
| Rhode Island | 14 | 16 | 11 | 9 | 7 | 6 | 3 | 5 | 5 | 12 | 12 | 6 | 9 | 13 | 10 |
| South Carolina | 59 | 44 | 57 | 57 | 50 | 50 | 54 | 60 | 73 | 65 | 82 | 82 | 90 | 89 | 88 |
| South Dakota | 23 | 9 | 11 | 12 | 19 | 14 | 9 | 8 | 9 | 10 | 20 | 17 | 19 | 19 | 26 |
| Tennessee | 62 | 50 | 69 | 61 | 59 | 48 | 50 | 56 | 42 | 59 | 69 | 78 | 75 | 90 | 93 |
| Texas | 197 | 131 | 130 | 151 | 124 | 128 | 115 | 117 | 152 | 182 | 229 | 243 | 256 | 342 | 285 |
| Utah | 18 | 23 | 17 | 15 | 21 | 11 | 21 | 22 | 14 | 23 | 24 | 28 | 18 | 22 | 31 |
| Vermont | 8 | 6 | 6 | 13 | 3 | 8 | 3 | 7 | 4 | 7 | 6 | 11 | 5 | 3 | 11 |
| Virginia | 59 | 42 | 38 | 32 | 33 | 35 | 36 | 39 | 42 | 38 | 43 | 45 | 54 | 56 | 57 |
| Washington | 61 | 43 | 47 | 37 | 35 | 37 | 41 | 28 | 51 | 38 | 37 | 55 | 54 | 59 | 72 |
| West Virginia | 15 | 24 | 19 | 19 | 21 | 26 | 10 | 8 | 21 | 24 | 17 | 21 | 29 | 30 | 27 |
| Wisconsin | 69 | 77 | 40 | 40 | 58 | 48 | 52 | 63 | 65 | 66 | 78 | 72 | 82 | 103 | 80 |
| Wyoming | 7 | 12 | 5 | 6 | 8 | 7 | 9 | 5 | 8 | 9 | 6 | 10 | 12 | 20 | 13 |
| NATIONAL | 3,244 | 2,806 | 2,395 | 2,449 | 2,320 | 2,227 | 2,161 | 2,116 | 2,294 | 2,483 | 2,897 | 3,197 | 3,270 | 3,714 | 4,008 |
| Puerto Rico | 32 | 25 | 27 | 30 | 32 | 32 | 26 | 27 | 27 | 35 | 51 | 47 | 60 | 56 | 63 |

Source: NCSA, FARS 1990-2003 (Final), 2004 (ARF)

Table 44: Registered Motorcycles by State from 1995 to 2004

| State | Calendar Year | | | | | | | | | |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Alabama | 37,926 | 36,706 | 39,025 | 44,540 | 49,205 | 54,849 | 54,998 | 62,010 | 70,859 | 81,086 |
| Alaska | 12,917 | 13,122 | 13,467 | 13,695 | 14,924 | 16,107 | 16,788 | 18,173 | 19,615 | 21,134 |
| Arizona | 69,170 | 72,235 | 74,680 | 54,373 | 145,190 | 165,094 | 191,364 | 219,105 | 209,215 | 209,048 |
| Arkansas | 17,217 | 16,490 | 14,331 | 21,070 | 21,786 | 25,020 | 29,290 | 34,101 | 38,500 | 43,668 |
| California | 532,053 | 526,048 | 454,360 | 403,971 | 419,572 | 448,501 | 488,042 | 535,424 | 562,176 | 626,529 |
| Colorado | 88,120 | 94,217 | 95,162 | 97,236 | 95,027 | 98,297 | 194,856 | 1,201 | 8,013 | 8,411 |
| Connecticut | 48,965 | 48,328 | 48,537 | 50,594 | 53,521 | 54,046 | 51,883 | 62,061 | 63,071 | 64,754 |
| Delaware | 9,168 | 9,985 | 9,941 | 10,174 | 10,704 | 10,980 | 12,656 | 13,820 | 15,008 | 17,485 |
| Dist of Columbia | 1,623 | 1,600 | 1,627 | 1,562 | 1,489 | 1,476 | 1,472 | 1,465 | 1,516 | 1,601 |
| Florida | 190,112 | 203,334 | 209,473 | 221,966 | 235,716 | 255,210 | 305,461 | 345,490 | 392,420 | 461,935 |
| Georgia | 72,318 | 73,492 | 75,625 | 86,273 | 87,009 | 88,071 | 91,946 | 109,024 | 118,671 | 129,439 |
| Hawaii | 13,209 | 25,114 | 21,487 | 20,445 | 19,302 | 20,061 | 21,749 | 20,584 | 22,394 | 23,106 |
| Idaho | 33,489 | 34,034 | 35,069 | 34,530 | 40,779 | 42,151 | 39,272 | 42,703 | 43,951 | 49,578 |
| Illinois | 184,216 | 171,091 | 181,789 | 204,225 | 216,641 | 195,511 | 256,834 | 232,187 | 261,038 | 276,122 |
| Indiana | 96,394 | 96,518 | 98,476 | 102,848 | 109,472 | 117,837 | 127,374 | 135,552 | 144,310 | 153,566 |
| Iowa | 111,503 | 131,851 | 132,000 | 128,540 | 125,201 | 126,671 | 137,973 | 140,544 | 140,000 | 140,000 |
| Kansas | 43,120 | 48,835 | 48,054 | 47,634 | 49,682 | 49,867 | 51,811 | 53,687 | 56,356 | 61,678 |
| Kentucky | 32,996 | 36,603 | 38,658 | 39,901 | 41,905 | 44,003 | 46,206 | 48,508 | 50,932 | 53,478 |
| Louisiana | 36,776 | 37,072 | 38,049 | 39,638 | 42,908 | 48,244 | 50,507 | 53,935 | 57,275 | 55,846 |
| Maine | 25,972 | 26,768 | 28,166 | 28,117 | 30,953 | 28,899 | 32,808 | 31,021 | 34,923 | 38,712 |
| Maryland | 38,833 | 37,936 | 38,701 | 42,636 | 45,973 | 49,403 | 54,711 | 56,823 | 63,994 | 72,844 |
| Massachusetts | 74,243 | 90,844 | 88,800 | 99,583 | 103,110 | 106,718 | 114,965 | 129,663 | 130,355 | 136,887 |
| Michigan | 127,902 | 149,971 | 155,673 | 154,358 | 167,882 | 183,592 | 199,168 | 204,805 | 215,698 | 228,856 |
| Minnesota | 117,891 | 116,189 | 123,858 | 128,097 | 126,786 | 143,055 | 152,040 | 158,516 | 174,706 | 188,903 |
| Mississippi | 29,636 | 30,162 | 30,857 | 31,138 | 32,212 | 31,859 | 26,840 | 27,037 | 26,998 | 27,162 |
| Missouri | 54,939 | 54,118 | 55,527 | 53,653 | 57,329 | 60,940 | 64,513 | 64,179 | 73,828 | 77,519 |
| Montana | 20,930 | 20,868 | 21,406 | 21,582 | 22,216 | 26,511 | 26,481 | 29,748 | 66,017 | 47,967 |
| Nebraska | 18,951 | 18,596 | 18,063 | 18,662 | 19,631 | 21,159 | 23,076 | 25,349 | 27,233 | 28,671 |
| Nevada | 21,672 | 22,471 | 23,781 | 24,709 | 23,499 | 24,912 | 32,521 | 35,898 | 37,206 | 44,823 |
| New Hampshire | 49,445 | 51,890 | 47,312 | 46,040 | 47,656 | 48,651 | 53,321 | 57,389 | 59,692 | 66,319 |
| New Jersey | 88,634 | 91,995 | 94,243 | 100,564 | 105,547 | 111,853 | 125,747 | 134,034 | 140,383 | 149,911 |
| New Mexico | 31,180 | 31,578 | 31,392 | 32,364 | 30,669 | 28,554 | 28,269 | 34,467 | 32,544 | 36,294 |
| New York | 169,679 | 136,246 | 135,814 | 138,846 | 143,547 | 107,486 | 118,864 | 142,790 | 150,756 | 170,148 |
| North Carolina | 67,207 | 67,855 | 70,216 | 75,002 | 78,733 | 82,647 | 86,761 | 91,063 | 95,598 | 100,366 |
| North Dakota | 16,894 | 16,394 | 16,051 | 16,167 | 16,387 | 17,035 | 18,214 | 17,865 | 19,154 | 20,953 |
| Ohio | 218,502 | 219,719 | 220,092 | 229,306 | 240,590 | 254,666 | 269,082 | 271,112 | 286,378 | 298,652 |
| Oklahoma | 55,480 | 59,210 | 52,318 | 53,326 | 53,277 | 57,646 | 77,566 | 66,838 | 72,705 | 84,651 |
| Oregon | 61,236 | 60,841 | 62,836 | 64,506 | 66,609 | 69,468 | 72,522 | 74,453 | 75,149 | 75,453 |
| Pennsylvania | 171,335 | 178,527 | 183,116 | 191,073 | 200,829 | 215,737 | 238,433 | 249,916 | 268,990 | 292,196 |
| Rhode Island | 16,979 | 17,048 | 17,741 | 17,673 | 19,210 | 19,484 | 21,374 | 23,009 | 24,589 | 26,506 |
| South Carolina | 34,570 | 39,219 | 39,853 | 41,116 | 46,844 | 51,679 | 56,660 | 62,726 | 57,177 | 60,029 |
| South Dakota | 25,184 | 24,734 | 24,584 | 25,210 | 25,761 | 29,205 | 31,525 | 33,935 | 37,549 | 41,602 |
| Tennessee | 70,058 | 78,869 | 56,229 | 59,620 | 62,985 | 71,084 | 83,880 | 84,334 | 93,814 | 108,659 |
| Texas | 130,117 | 148,815 | 133,423 | 149,175 | 168,896 | 187,174 | 213,299 | 234,922 | 261,553 | 286,992 |
| Utah | 22,171 | 23,171 | 23,175 | 24,470 | 24,674 | 28,291 | 38,787 | 41,421 | 38,131 | 44,386 |
| Vermont | 18,113 | 18,256 | 18,856 | 16,684 | 17,663 | 21,740 | 24,194 | 26,527 | 26,332 | 28,304 |
| Virginia | 58,199 | 57,561 | 56,338 | 57,582 | 57,464 | 60,857 | 65,056 | 70,139 | 73,692 | 75,457 |
| Washington | 95,795 | 104,450 | 104,553 | 106,352 | 107,290 | 118,697 | 123,492 | 134,212 | 141,945 | 160,227 |
| West Virginia | 18,494 | 16,075 | 17,655 | 22,496 | 19,447 | 26,307 | 27,855 | 30,868 | 19,291 | 19,534 |
| Wisconsin | 168,937 | 169,594 | 190,673 | 170,329 | 192,806 | 179,576 | 209,486 | 204,732 | 240,519 | 232,808 |
| Wyoming | 16,559 | 14,954 | 15,261 | 15,799 | 15,925 | 19,187 | 21,064 | 24,791 | 27,816 | 30,615 |
| NATIONAL | 3,767,029 | 3,871,599 | 3,826,373 | 3,879,450 | 4,152,433 | 4,346,068 | 4,903,056 | 5,004,156 | 5,370,035 | 5,780,870 |
| Puerto Rico | N/A | N/A | N/A | 33,502 | 21,436 | 21,436 | 21,833 | 21,833 | 21,833 | 31,770 |

Source: FHWA

Table 45: Motorcycle Rider Fatality Rate per 10,000 Registered Motorcycles by State from 1995 to 2004

| State | Calendar Year | | | | | | | | | |
|------------------|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Alabama | 8.7 | 8.4 | 7.4 | 7.6 | 6.5 | 7.8 | 7.8 | 6.9 | 7.3 | 9.1 |
| Alaska | 2.3 | 4.6 | 4.5 | 3.7 | 6.0 | 3.7 | 4.2 | 6.6 | 6.1 | 3.8 |
| Arizona | 9.4 | 9.6 | 7.6 | 11.0 | 5.0 | 5.5 | 3.8 | 4.3 | 5.2 | 5.7 |
| Arkansas | 9.9 | 15.2 | 13.3 | 13.3 | 10.1 | 10.8 | 13.0 | 11.1 | 14.5 | 13.1 |
| California | 4.9 | 4.4 | 5.2 | 5.0 | 5.6 | 6.2 | 6.1 | 6.1 | 6.8 | 6.9 |
| Colorado | 5.1 | 5.3 | 4.0 | 5.8 | 6.3 | 7.4 | 4.3 | 607.8 | 87.4 | 95.1 |
| Connecticut | 6.7 | 6.6 | 7.8 | 8.1 | 7.1 | 9.3 | 8.9 | 7.6 | 4.6 | 8.8 |
| Delaware | 6.5 | 10.0 | 8.0 | 5.9 | 6.5 | 4.6 | 7.9 | 5.1 | 7.3 | 4.6 |
| Dist of Columbia | 37.0 | 25.0 | 24.6 | 32.0 | 26.9 | 47.4 | 34.0 | 47.8 | 46.2 | 50.0 |
| Florida | 9.5 | 7.9 | 8.8 | 8.2 | 7.6 | 10.1 | 9.4 | 9.2 | 9.3 | 9.4 |
| Georgia | 6.1 | 6.4 | 7.4 | 7.7 | 6.8 | 6.9 | 10.3 | 7.8 | 8.7 | 8.6 |
| Hawaii | 15.9 | 8.0 | 6.5 | 10.3 | 8.8 | 9.0 | 8.3 | 11.7 | 8.5 | 9.1 |
| Idaho | 5.4 | 3.5 | 5.1 | 1.7 | 3.2 | 4.3 | 4.8 | 2.8 | 4.3 | 4.8 |
| Illinois | 5.5 | 6.4 | 4.6 | 4.8 | 4.8 | 6.4 | 5.5 | 4.3 | 5.5 | 5.7 |
| Indiana | 6.7 | 6.4 | 4.9 | 6.7 | 6.1 | 6.2 | 5.9 | 6.5 | 5.6 | 7.0 |
| Iowa | 3.9 | 1.3 | 2.1 | 2.2 | 2.4 | 2.5 | 2.8 | 2.9 | 3.6 | 2.6 |
| Kansas | 3.2 | 3.9 | 3.5 | 4.0 | 3.0 | 4.2 | 4.8 | 6.1 | 5.5 | 4.9 |
| Kentucky | 7.0 | 7.6 | 6.7 | 8.0 | 10.0 | 8.6 | 12.8 | 9.3 | 11.4 | 12.7 |
| Louisiana | 7.6 | 7.8 | 5.3 | 8.8 | 9.3 | 11.8 | 12.9 | 12.6 | 14.5 | 12.9 |
| Maine | 5.0 | 5.6 | 3.6 | 5.3 | 5.2 | 6.2 | 4.3 | 4.2 | 5.7 | 5.7 |
| Maryland | 6.7 | 6.6 | 6.7 | 8.2 | 9.6 | 10.1 | 9.7 | 9.0 | 8.8 | 9.5 |
| Massachusetts | 3.8 | 3.7 | 3.4 | 3.4 | 3.4 | 3.1 | 4.6 | 4.5 | 2.7 | 4.2 |
| Michigan | 6.5 | 4.1 | 4.0 | 3.6 | 4.9 | 4.7 | 4.9 | 4.2 | 3.8 | 3.5 |
| Minnesota | 3.1 | 3.6 | 2.0 | 3.2 | 2.4 | 2.6 | 2.8 | 3.0 | 3.7 | 2.8 |
| Mississippi | 5.1 | 3.3 | 4.2 | 5.8 | 5.6 | 6.9 | 11.2 | 9.6 | 15.6 | 14.7 |
| Missouri | 7.3 | 6.5 | 6.7 | 5.2 | 6.5 | 7.2 | 8.2 | 9.3 | 12.2 | 7.2 |
| Montana | 7.6 | 4.3 | 9.3 | 6.5 | 6.8 | 4.9 | 4.9 | 8.1 | 1.8 | 4.4 |
| Nebraska | 3.2 | 3.2 | 2.8 | 3.2 | 4.1 | 1.4 | 5.2 | 5.9 | 4.8 | 7.3 |
| Nevada | 10.6 | 8.5 | 10.1 | 5.3 | 7.2 | 8.4 | 6.5 | 9.7 | 7.0 | 11.6 |
| New Hampshire | 3.2 | 4.2 | 3.0 | 3.7 | 6.7 | 5.5 | 4.1 | 2.1 | 1.5 | 4.2 |
| New Jersey | 4.5 | 5.7 | 4.6 | 3.7 | 4.0 | 5.0 | 5.8 | 3.7 | 4.1 | 4.9 |
| New Mexico | 10.6 | 8.2 | 8.3 | 6.5 | 7.5 | 9.1 | 11.0 | 9.3 | 11.1 | 10.7 |
| New York | 5.4 | 7.0 | 8.4 | 8.0 | 7.9 | 11.1 | 12.4 | 9.9 | 10.2 | 8.8 |
| North Carolina | 11.3 | 10.6 | 8.8 | 11.1 | 13.5 | 11.9 | 12.6 | 13.5 | 11.3 | 13.4 |
| North Dakota | 3.6 | 3.0 | 1.9 | 1.9 | 1.8 | 2.3 | 2.2 | 0.6 | 2.1 | 4.3 |
| Ohio | 4.9 | 5.3 | 4.8 | 5.1 | 5.0 | 5.0 | 4.6 | 4.9 | 4.7 | 4.5 |
| Oklahoma | 7.2 | 4.2 | 6.3 | 4.7 | 6.2 | 4.2 | 5.0 | 5.8 | 5.9 | 9.2 |
| Oregon | 3.6 | 4.6 | 3.8 | 3.9 | 2.7 | 5.3 | 4.4 | 3.5 | 5.9 | 4.9 |
| Pennsylvania | 4.9 | 5.5 | 5.0 | 5.8 | 5.5 | 6.9 | 5.5 | 5.4 | 5.8 | 5.4 |
| Rhode Island | 3.5 | 1.8 | 2.8 | 2.8 | 6.2 | 6.2 | 2.8 | 3.9 | 5.3 | 3.8 |
| South Carolina | 14.5 | 13.8 | 15.1 | 17.8 | 13.9 | 15.9 | 14.5 | 14.3 | 15.6 | 14.7 |
| South Dakota | 5.6 | 3.6 | 3.3 | 3.6 | 3.9 | 6.8 | 5.4 | 5.6 | 5.1 | 6.2 |
| Tennessee | 6.9 | 6.3 | 10.0 | 7.0 | 9.4 | 9.7 | 9.3 | 8.9 | 9.6 | 8.6 |
| Texas | 9.8 | 7.7 | 8.8 | 10.2 | 10.8 | 12.2 | 11.4 | 10.9 | 13.1 | 9.9 |
| Utah | 5.0 | 9.1 | 9.5 | 5.7 | 9.3 | 8.5 | 7.2 | 4.3 | 5.8 | 7.0 |
| Vermont | 4.4 | 1.6 | 3.7 | 2.4 | 4.0 | 2.8 | 4.5 | 1.9 | 1.1 | 3.9 |
| Virginia | 6.0 | 6.3 | 6.9 | 7.3 | 6.6 | 7.1 | 6.9 | 7.7 | 7.6 | 7.6 |
| Washington | 3.9 | 3.9 | 2.7 | 4.8 | 3.5 | 3.1 | 4.5 | 4.0 | 4.2 | 4.5 |
| West Virginia | 14.1 | 6.2 | 4.5 | 9.3 | 12.3 | 6.5 | 7.5 | 9.4 | 15.6 | 13.8 |
| Wisconsin | 2.8 | 3.1 | 3.3 | 3.8 | 3.4 | 4.3 | 3.4 | 4.0 | 4.3 | 3.4 |
| Wyoming | 4.2 | 6.0 | 3.3 | 5.1 | 5.7 | 3.1 | 4.7 | 4.8 | 7.2 | 4.2 |
| NATIONAL | 5.9 | 5.6 | 5.5 | 5.9 | 6.0 | 6.7 | 6.5 | 6.5 | 6.9 | 6.9 |
| Puerto Rico | N/A | N/A | N/A | 8.1 | 16.3 | 23.8 | 21.5 | 27.5 | 25.6 | 19.8 |

Source: NCSA, FARS 1995-2003 (Final), 2004 (ARF), Motorcycle Registration -FHWA

7. APPENDIX B: Data Sources

The following sections give information relating to the four data sources used in the analysis.

7.1 Fatality Analysis Reporting System (FARS)

The National Center for Statistics and Analysis (NCSA) collects and analyzes data, conducts research, and disseminates statistical information to support efforts by NHTSA and the highway safety community aimed at reducing deaths, injuries, and economic losses resulting from motor vehicle crashes.

NCSA designed and developed the Fatality Analysis Reporting System (FARS) database, a national census of police-reported motor vehicle crashes resulting in fatal injuries. FARS compiles data from various sources on the location and circumstances of the crash, types of vehicles, and people involved. This system generates overall measures of highway safety, helps identify traffic safety problems, and provides a basis to evaluate the effectiveness of motor vehicle safety standards and highway safety programs.

FARS system became operational in 1975. It contains a census of fatal motor vehicle traffic crashes within the 50 states and the District of Columbia and Puerto Rico.

A motor vehicle crash is a transport incident that involves a motor vehicle in transport, is not an aircraft incident or water craft incident, and does not include any harmful event involving a railway train in transport prior to involvement of a motor vehicle in transport.

To be included in FARS, a crash must involve a motor vehicle traveling on a traffic way customarily open to the public, and result in the death of a person (either an occupant of a vehicle or a non-motorist) within 30 days of the crash. Data elements contain specific information including the age of the person, license status of the driver, roadway type, motorcycle engine size, and land use (urban/rural). These data elements can be used in determining trends relating to fatal crashes. Thus, the FARS system provides a basis to evaluate the effectiveness of motor vehicle safety standards and highway safety programs.

Additional information on FARS can be obtained from NHTSA's website at: www-fars.nhtsa.dot.gov

7.2 Motorcycle Industry Council (MIC)

The Motorcycle Industry Council (MIC) is a nonprofit national trade association representing the motorcycle industry. MIC's purpose is to preserve and promote motorcycling and the motorcycle industry. This is accomplished through activities in government relations, statistics, communications, and technical and aftermarket programs. MIC has two offices, an Executive Office in Irvine, California, and a Government Relations Office in the Washington, DC, area.

More than 300 members represent manufacturers and distributors of motorcycles, scooters, parts and accessories, and members of allied trades, such as publishing companies, advertising agencies, insurance companies, and consultants. While dealers, clubs and individuals are not eligible for membership, MIC works with these groups on issues of mutual interest. Additional information can be obtained at: www.mic.org

7.3 Federal Highway Administration (FHWA)

FHWA is part of the U.S. Department of Transportation and is headquartered in Washington, DC, with field offices across the United States. FHWA performs its mission through these main programs:

The Federal Highway Program provides federal financial assistance to States to construct and improve the National Highway System, urban and rural roads, and bridges. The program provides funds for general improvements and development of safe highways and roads.

The Federal Lands Highway Program provides access to and within national forests, national parks, Indian reservations and other public lands by preparing plans, letting contracts, supervising construction facilities, and conducting bridge inspections and surveys.

To support these program areas, FHWA conducts and manages a comprehensive research, development, and technology program.

Each year FHWA brings together annual series of selected statistical tabulations relating to highway transportation in three major areas:

- Highway Use – the ownership and operation of motor vehicles;
- Highway Finance – the receipts and expenditures for highways by public agencies; and
- The Highway Plant – the extent, characteristics, and performance of the public roadways, roads, and streets in the United States.

Additional information can be obtained at: www.fhwa.dot.gov

7.4 U.S. Census Bureau

The U.S. Census Bureau is part of the Department of Commerce and located in Washington, DC. One of the missions of the Census Bureau is to collect census data every ten years and update the data each year. The sole purpose of the census is to secure general statistical information and compile the population by state, race, age groups, and several other categories. Additional information can be obtained at: www.census.gov

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June 2006



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