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**Technical Report**

# **Fatal Motor Vehicle Crashes on Indian Reservations 1975 - 2002**



**National Center for Statistics and Analysis**

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<p>Abstract</p> <p>The objective of this study by the National Center for Statistics and Analysis (NCSA), was to examine the characteristics of fatal motor vehicle crashes that occurred on federal lands, specifically, those lands that have been designated as Indian reservations. Using data from the 1975 - 2002 NCSA's Fatality Analysis Reporting System (FARS), characteristics of these crashes were examined to better understand the circumstances that are involved in these particular types of crashes.</p> <p>Five thousand nine hundred and sixty-two fatal motor vehicle crashes occurred on roads under the jurisdiction of Indian reservations between 1975 and 2002, an average of 213 fatal crashes per year. In 2002, the number of crashes on reservations reached a new high of 276, representing a 4.5% increase over the previous recorded high of 264 crashes in 1996 and a 52.5% increase over the 181 crashes in 1975. Over the years, these crashes have resulted in the loss of 7,093 lives of which 3,322 were drivers 2,717 were passengers and 1,001 were pedestrians. This report was written to provide additional information relative to these crashes.</p>			
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## EXECUTIVE SUMMARY

This report was written to examine the characteristics of fatal motor vehicle crashes on Indian reservations as reported to the National Center for Statistics and Analysis (NCSA), Fatality Analysis Reporting Systems (FARS). It makes available to the public for the first time, motor vehicle crash statistics related to Indian reservations as collected by the FARS. Data from 1975 – 2002 were used to analyze crash characteristics such as the number of vehicles involved in the crash, time of day that the crash occurred, fatalities in the crash by sex and age, restraint use by occupants of passenger cars and light trucks involved in the crashes and the involvement of speed in these crashes. Alcohol involvement in fatal motor vehicle crashes on reservations that occurred between 1982 – 2002 was also examined. These are the only years for which alcohol data were collected in the FARS. In addition, from 1999 – 2002, the race of fatally injured drivers has been collected in the FARS. This race data for this four year period was analyzed for motor vehicle crashes on reservations as well.

From 1975 to 2002, an average of 213 fatal motor vehicle crashes a year occurred on roads within areas designated as Indian reservations. During this time-period, the 5,962 fatal crashes have resulted in the loss of 7,093 lives. The number of fatal crashes has shown an increase over the years. The average number of fatal crashes for the first five years of this study (1975 - 1979) was just under 187 crashes per year, while the average number of crashes for the most recent five year period (1998 – 2002) increased 29.5 percent to 239 crashes per year. The number of fatalities in these crashes followed a similar pattern, for the first five years of the study, the average number of crash related fatalities was 231 fatalities per year, but for the last five years the average number of fatalities increased 23 percent to over 284 lives lost per year.

In comparing Indian Reservation crash fatality data with national crash data, Indian reservations show significantly higher levels of involvement in many areas. On reservations, the number of fatal motor vehicle crashes per year increased 52.5 percent, (from 181 fatal crashes in 1975 to 276 fatal crashes in 2002), while the number of fatal crashes in the nation declined 2.2 percent, (from 39,161 fatal crashes to 38,309 fatal crashes).

Other findings are as follows:

- The percentage of fatal crashes on reservations that involved a single vehicle was almost twenty-six percent higher than the percentage in the nation (73% to 58%).
- Sixty-three percent of the fatalities in crashes on reservations were under 35 years old compared to fifty-seven percent of the nation's crash fatalities.
- Seventy-six percent of passenger vehicle occupant fatalities on reservations were unrestrained at the time of the fatal crash compared to sixty-eight percent of passenger vehicle occupant fatalities in the nation being unrestrained.
- Forty-three percent of the fatalities on reservations were in speed related crashes while thirty-five percent of the nation's fatalities were a result of a speed related crash.

- Since 1982, sixty-five percent of fatal crashes that occurred on reservations were alcohol related compared to forty-seven percent alcohol involvement in the nation.
- Forty-eight percent of the drivers involved in fatal crashes on reservations since 1982, had a BAC of 0.01 or more compared to just thirty percent of drivers involved in motor vehicle crashes across the nation.

## **RECOMMENDATIONS**

Specific safety, education, and enforcement programs need to be established primarily for high risk Native Americans (under 35 years old), who make up 63 percent of the fatalities in motor vehicle crashes on Indian reservations. In addition, improvements in data and record keeping at the Federal and state level could result in better data for the FARS system.

## 1. INTRODUCTION

There are 562 federally recognized Indian Nations, including Alaska Native villages. These Native Americans reside on 313 federal reservations that encompass an estimated 56 million acres of land. Indian reservations are considered special jurisdictions because of their special legal and political relationship with the Federal government. This land is reserved for a tribe when it relinquished its other land areas to the U.S. through treaties. Other special jurisdictions include national parks, military installations, college and university campuses and other Federal properties. Recently, several studies have identified American Indians as a group having elevated risks in motor vehicle fatalities due to factors such as alcohol and lack of restraint usage. This study used data collected in the Fatality Analysis Reporting System (FARS), 1975 – 2002 to identify trends and other related areas of concern in hopes that programs can be developed to target those particular groups affected the most.

On roads under the jurisdiction of Indian reservations, 5,962 fatal motor vehicle crashes occurred between 1975 and 2002 (Figure 1). During this time period, the number of fatal crashes on Indian reservations has increased by 52.5 percent while the total number of fatal crashes in the United States has decreased 2.2 percent. These 5,962 fatal crashes on reservations represent less than one percent of the total number of fatal motor vehicle crashes that occurred in the nation during this time period (1,105,105), but they do represent almost 65 percent of all fatal motor vehicle crashes on roads within known special jurisdictions (9,179) (Figure 2).

Since the majority of residents of Indian reservations are American Indians, it is reasonable to assume that the majority of crashes that occurred in the Indian land involved American Indians. However, as businesses operating on the Indian reservations increase, it is of interest to know whether the racial composition of fatally injured people has changed over the years. The FARS started collecting race/ethnicity data from 1999. Based on data from 1999 to 2002, among 1,165 reported fatalities on the Indian reservations, 726 are reported as American Indians, 329 reported as another race and 110 with race unknown. Using the known data, 69 percent of fatalities were reported as American Indians. The percentage has not changed greatly over the four years, with the annual values for American Indian fatalities being 73 percent, 66 percent, 68 percent and 67 percent. The fact that about one third of the fatalities are non-Indians does suggest that non-residents of the reservations are driving through or to the area.

## **2. DATA**

The analysis in this report is based on data from NHTSA's Fatality Analysis Reporting System (FARS), 1975 - 2002. Many of the Indian Reservation case reports have to be acquired by the state from the various tribal organizations, which are the governing authorities on these lands. The FARS Units can then in turn have access to them as part of the census of all fatal crash reports in the state.

There are conceivably those cases that are within the boundaries of a reservation but are investigated and reported by regular state agencies (as with a road that runs through a reservation but patrolled by state or county police).

The FARS Units have various methods of detecting that cases exist for which they need to receive reports from "the tribes". Requests for these cases can meet with varying degrees of cooperation.

In this study FARS cases were taken as coded. Therefore any case that was given the special jurisdiction code of "3" was included. As stated above this designation is made at the state level and could in some cases conflict with Indian Reservations that are recognized by the Federal government. Cases could conceivably be classified as having occurred on a federal reservation when in fact, it occurred on a reservation that is recognized only on the state level. Further study is needed to determine how the codes are used and interpreted.

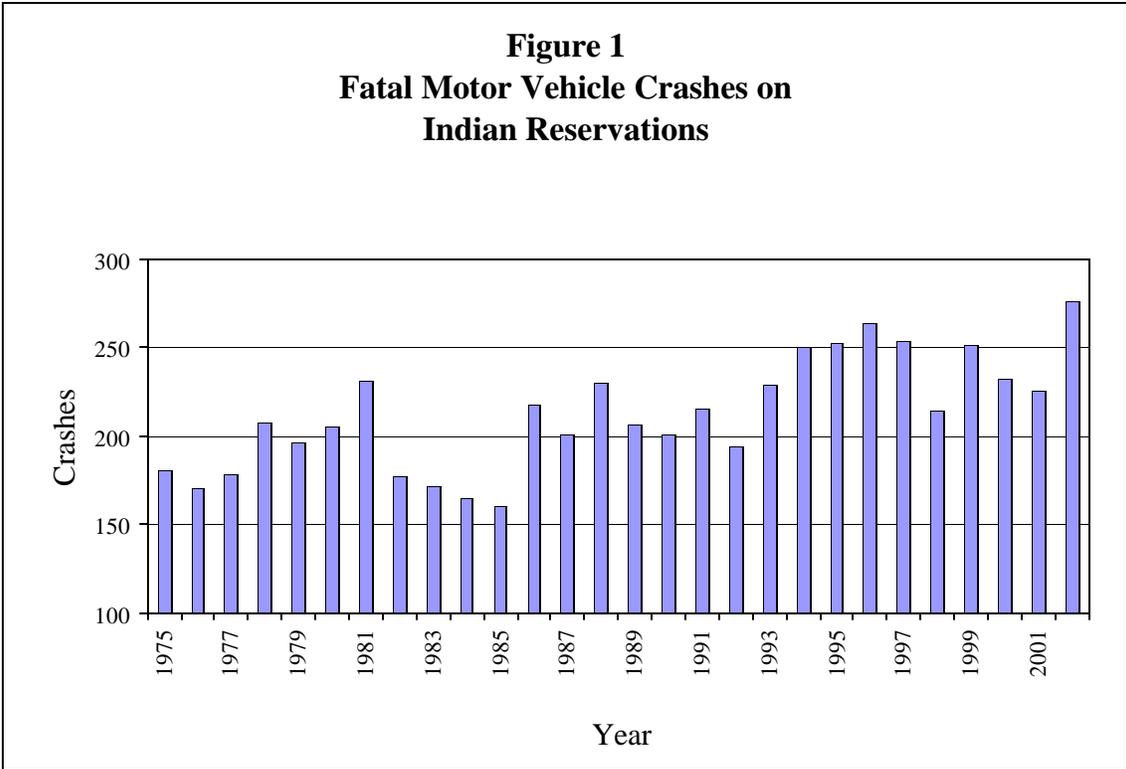
Alcohol involvement in fatal motor vehicle crashes on reservations that occurred between 1982 and 2002 was also examined in this report. These are the only years for which the FARS alcohol data were available.

## **3. METHODOLOGY**

This study takes a look at motor vehicle crash trends over time to determine overall increases or decreases in fatal crashes and fatalities associated with those motor vehicle crashes on reservations from 1975 through 2002.

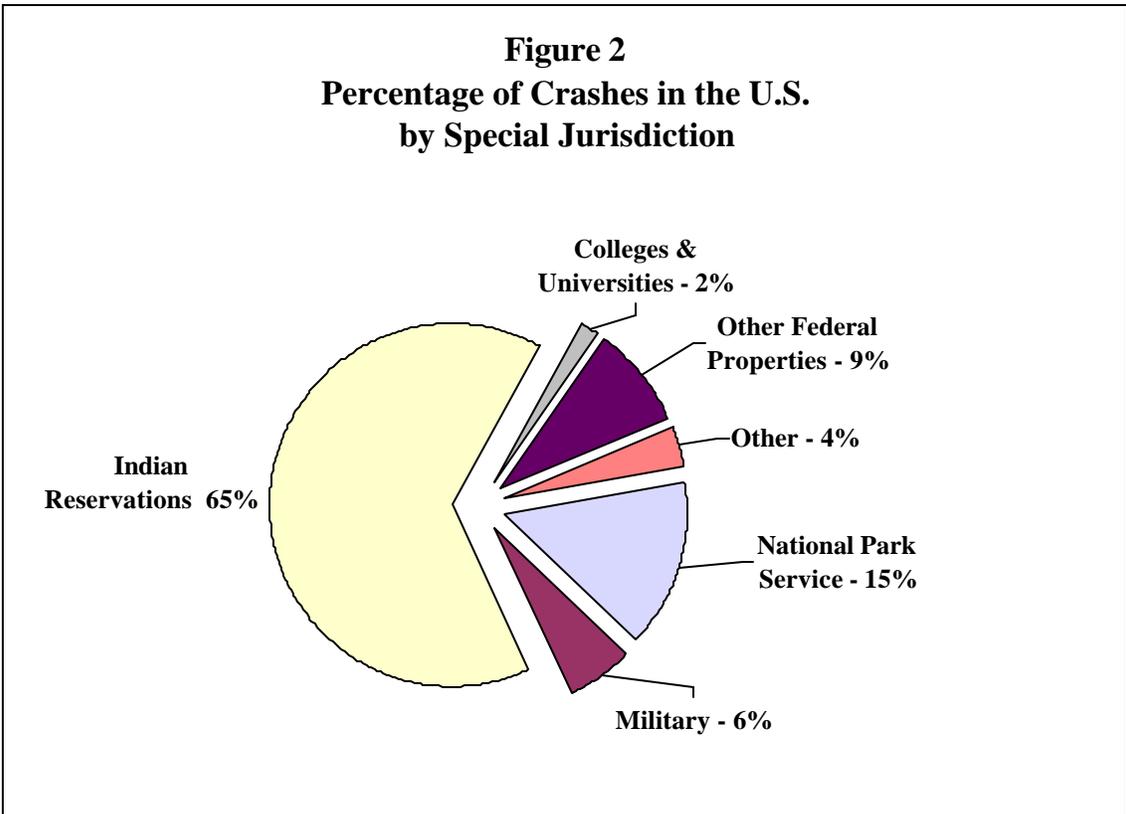
Reservation fatal crash statistics were also compared to national fatal crash totals to assess how the segment of the population that resides on reservations relates to the Nation as a whole.

**Figure 1**  
**Fatal Motor Vehicle Crashes on**  
**Indian Reservations**



Source: NCSA, NHTSA, FARS 1975 – 2002

**Figure 2**  
**Percentage of Crashes in the U.S.**  
**by Special Jurisdiction**



Source: NCSA, NHTSA, FARS 1975 - 2002

**Table 1  
Fatal Crashes and Fatalities on Indian Reservations  
By Year and Person Type**

<b>Year</b>	<b>Crashes</b>	<b>Total Fatalities</b>	<b>Driver Fatalities</b>	<b>Passenger Fatalities</b>	<b>Pedestrian Fatalities</b>	<b>Other/ Unknown Fatalities</b>
1975	181	222	94	85	42	1
1976	170	213	102	84	25	2
1977	178	219	101	83	34	1
1978	208	251	110	95	44	2
1979	196	250	117	96	34	3
1980	206	249	93	104	52	0
1981	231	272	133	90	47	2
1982	177	193	88	58	45	2
1983	172	203	94	68	38	3
1984	165	190	79	74	35	2
1985	161	199	85	87	27	0
1986	218	255	124	96	35	0
1987	201	245	118	97	27	3
1988	230	263	134	90	36	3
1989	207	238	127	84	26	1
1990	201	229	103	88	37	1
1991	216	258	131	90	34	3
1992	194	227	107	89	28	3
1993	229	279	126	103	49	1
1994	250	294	146	105	42	1
1995	253	292	142	120	28	2
1996	264	311	135	131	42	3
1997	254	314	144	131	36	3
1998	214	262	126	104	31	1
1999	252	299	150	115	31	3
2000	232	282	137	114	27	4
2001	226	257	121	93	41	2
2002	276	327	155	143	28	1
<b>Total</b>	<b>5,962</b>	<b>7,093</b>	<b>3,322</b>	<b>2,717</b>	<b>1,001</b>	<b>53</b>

Source: NCSA, NHTSA, FARS 1975 – 2002

**Table 2**  
**Percent of Fatal Crashes by Crash Type and Relation to Roadway –**  
**U.S./Reservations**

Crash Type	On Road		Off Road		Other/Unknown		Total	
	Number	Row % Col %	Number	Row % Col %	Number	Row % Col %	Number	Row % Col %
Single-vehicle	1,236	28% 46%	2,662	61% 98%	475	11% 86%	4,373	100% 73%
Multi-vehicle	1,424	93% 53%	40	9% 2%	64	1% 12%	1,528	100% 26%
Unknown	40	66% 1%	6	10% *	15	25% 3%	61	100% 1%
Total	2,700	45% 100%	2,708	45% 100%	554	9% 100%	5,962	100% 100%

**Percent of Fatal Crashes by Crash Type and Relation to Roadway –**  
**U.S./Total**

Crash Type	On-Road		Off-Road		Other/Unknown		Total	
	Number	Row % Col %	Number	Row % Col %	Number	Row % Col %	Number	Row % Col %
Single-vehicle	222,323	35% 34%	416,228	65% 96%	6,465	1% 88%	645,016	100% 58%
Multi-vehicle	437,242	96% 66%	16,800	4% 4%	740	* 10%	454,782	100% 41%
Unknown	4,666	88% *	497	9% *	144	3% 2%	5,307	100% 1%
Total	664,231	60% 100%	433,525	39% 100%	7,349	1% 100%	1,105,105	100% 100%

Source: NCSA, NHTSA, FARS 1975 - 2002

\* Denotes less than 1 percent

**Table 3**  
**Fatal Crashes on Reservations by Time of Day and Day of Week**

Time of Day	Day of Week														Total	Row% Col%
	Sunday	Row% Col%	Monday	Row% Col%	Tuesday	Row% Col%	Wednesday	Row% Col%	Thursday	Row% Col%	Friday	Row% Col%	Saturday	Row% Col%		
Midnight – 3 am	212	25% 19%	70	8% 12%	64	7% 11%	48	6% 8%	86	10% 13%	114	13% 12%	259	30% 17%	854	100% 14%
3 am- 6 am	159	26% 14%	48	8% 8%	43	7% 11%	45	7% 8%	61	10% 9%	59	10% 6%	187	31% 13%	602	100% 10%
6 am - 9am	104	21% 9%	51	10% 9%	39	8% 7%	49	10% 9%	59	12% 9%	67	13% 7%	137	27% 9%	506	100% 8%
9 am - Noon	83	18% 7%	48	11% 8%	43	9% 7%	48	11% 8%	62	14% 9%	60	13% 7%	110	24% 7%	454	100% 8%
Noon – 3 pm	109	18% 10%	53	9% 9%	73	12% 12%	62	10% 11%	69	12% 10%	84	14% 9%	148	25% 10%	598	100% 10%
3 pm – 6 pm	155	17% 14%	107	12% 18%	108	12% 18%	102	11% 18%	101	11% 15%	147	16% 16%	186	21% 12%	907	100% 15%
6 pm – 9 pm	161	16% 15%	93	9% 16%	115	11% 19%	96	10% 17%	128	13% 19%	184	18% 20%	225	22% 15%	1,003	100% 17%
9 pm – Midnight	89	11% 8%	93	11% 16%	89	11% 15%	92	11% 16%	97	12% 14%	175	21% 19%	191	23% 13%	826	100% 14%
Unknown	37	17% 3%	17	8% 3%	24	11% 4%	23	11% 4%	20	9% 3%	30	14% 3%	46	22% 3%	212	100% 4%
<b>Total</b>	<b>1,109</b>	<b>19% 100%</b>	<b>580</b>	<b>10% 100%</b>	<b>598</b>	<b>10% 100%</b>	<b>565</b>	<b>9% 100%</b>	<b>683</b>	<b>11% 100%</b>	<b>920</b>	<b>15% 100%</b>	<b>1,489</b>	<b>25% 100%</b>	<b>5,962</b>	<b>100% 100%</b>

Source: NCSA, NHTSA, FARS 1975 – 2002

\* Categories do not include upper limit

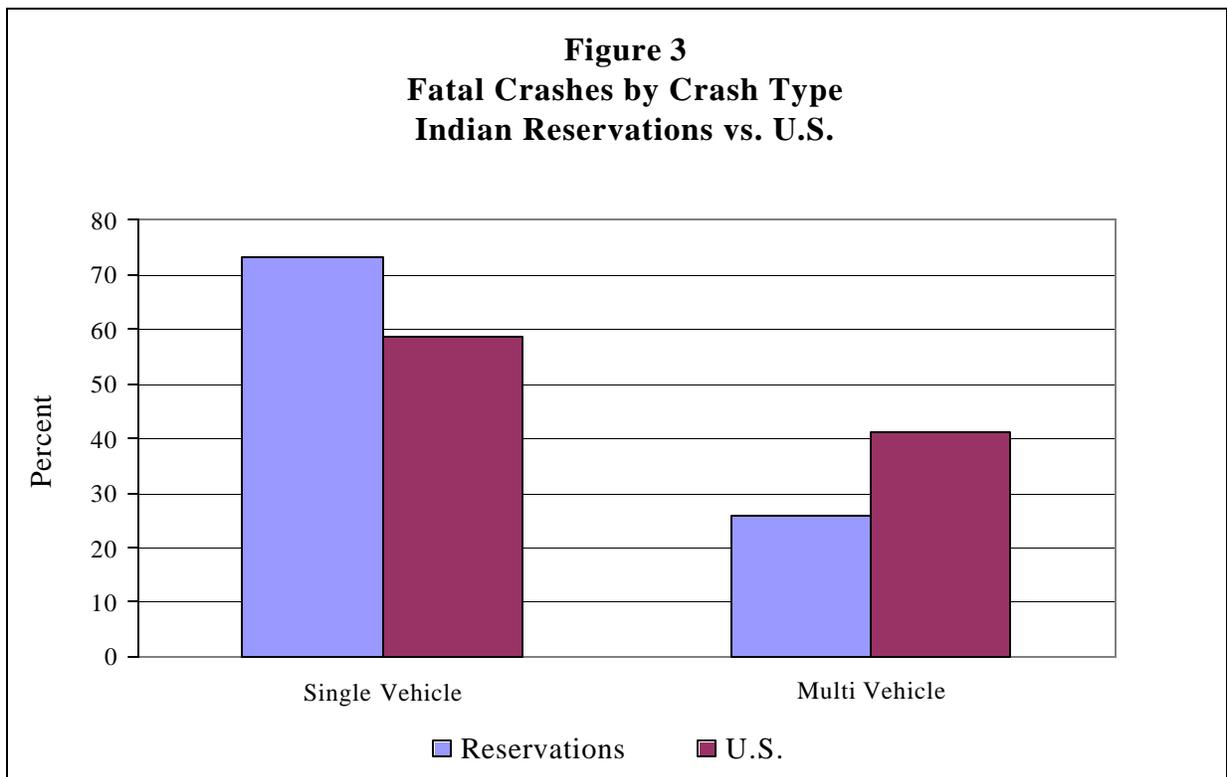
\*\* Total includes 18 crashes of unknown day

## 4. FINDINGS

### 4.1 Fatal Crash Characteristics

#### 4.1.1 Number of Vehicles Involved

Since 1975, over 58 percent (645,016) of all fatal motor vehicle crashes in the U.S. were single-vehicle crashes (Table 2). On Indian reservations during the same period, the percentage of fatal crashes that were single vehicle was much higher at 73 percent (4,373) (Figure 3). Of those single-vehicle fatal crashes, 61 percent (2,662) occurred off the roadway. More than 98 percent of the off-road fatal crashes were single-vehicle crashes. Nationwide, 96 percent of all off-road fatal crashes involved a single-vehicle and about 65 percent of all single-vehicle crashes were off-road. Fatal crashes involving more than one vehicle accounted for 26 percent (1,528) of the total number of fatal crashes on reservations. Over 93 percent of these crashes occurred on the roadway (1,424) and 53 percent of all on-road crashes involved more than one vehicle. Single-vehicle off-road fatal crashes represented about 45 percent of all fatal crashes on reservations, whereas in the nation, they represent less than 38 percent of all fatal crashes. Multi-vehicle crashes on the road represented 24 percent of all fatal crashes on reservations and over 41 percent of all fatal crashes in the nation.



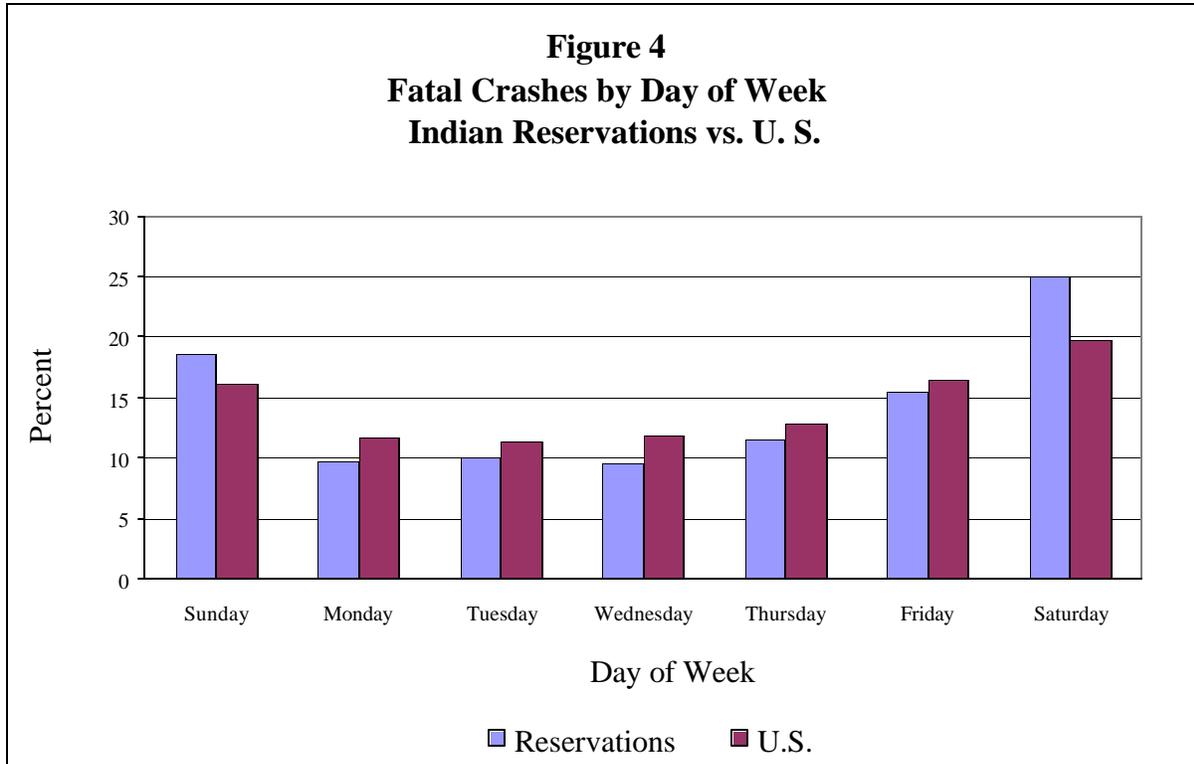
Source: NCSA, NHTSA, FARS 1975 - 2002

### 4.1.2 Daytime vs. Nighttime

When looking at daytime and nighttime crashes, 55 percent of fatal crashes on reservations happened at night (6:00 pm - 6:00 am), an average of 117 per year, or 3,285 since 1975. Over 41 percent of all fatal crashes on Indian reservations occurred during the day (6:00 am - 6:00 pm). Excluding crashes where the time of crash is unknown, 2,465 crashes occurred during daytime hours on these reservations since 1975, an average of 88 fatal motor vehicle crashes per year. These percentages are just about the same as those for the United States as a whole, where just over 55 percent of all fatal crashes occur at night and just over 44 percent occur during the day.

### 4.1.3 Day of Week

Since 1975, 59 percent of all fatal crashes on Indian reservations occurred on Friday (15%), Saturday (25%) or Sunday (19%)(Figure 4). This compares with the 52 percent of all crashes in the nation on those same days. Saturday, with over one-fourth of the total crashes (1,489), is the day with the highest number of crashes on reservations, followed in order by Sunday (1,109), Friday (920), Thursday (683), Monday (580), Tuesday (598), and Wednesday (565). During this study period, an average of 53 crashes a year, or about one per week, occurred on Saturday, 40 occurred on Sundays, 33 occurred on Fridays, 24 occurred on Thursdays, 21 occurred on Mondays, 21 on occurred Tuesdays, and 20 occurred on Wednesdays. Nationally, crashes are more evenly distributed throughout the week, ranging from a high of 20 percent (Saturday), to a low of 11 percent (Tuesday).



Source: NCSA, NHTSA, FARS 1975 - 2002

#### 4.1.4 Hour of the Day

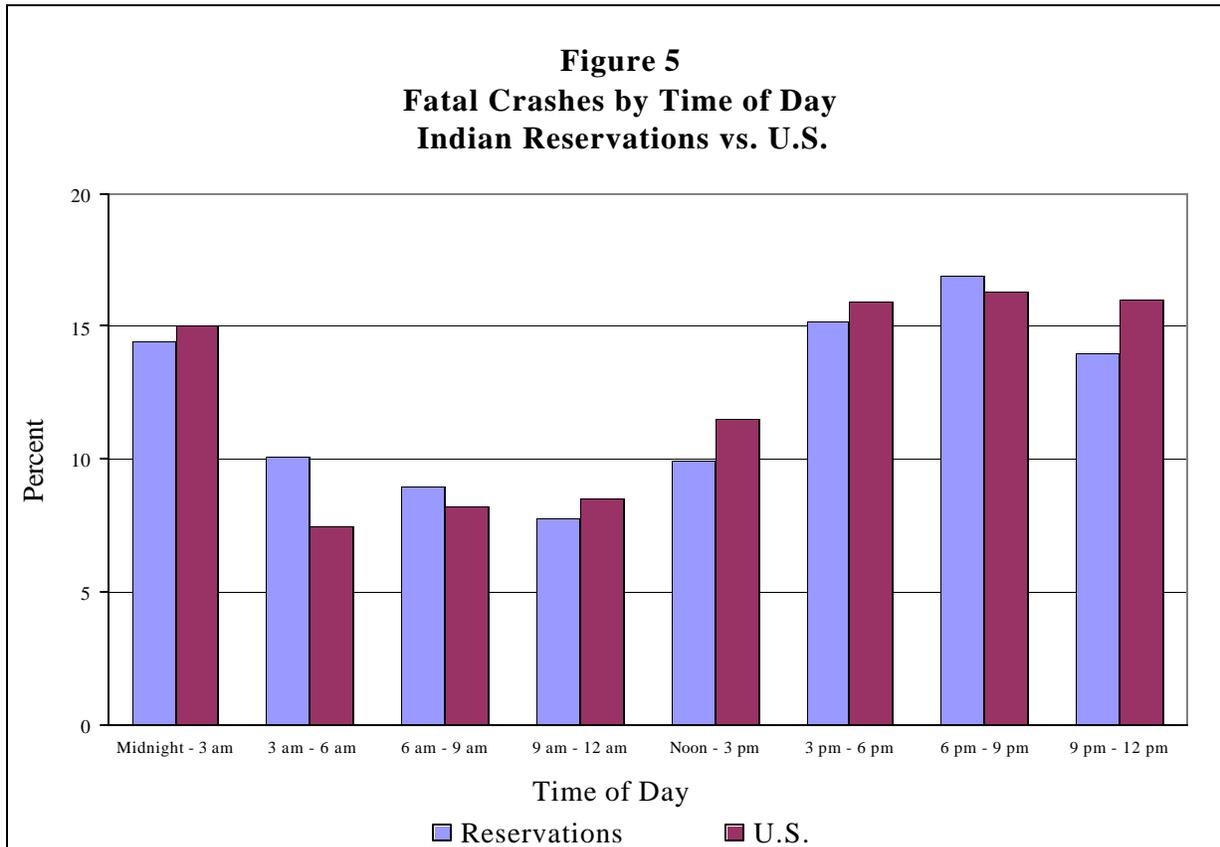
The most likely time to be involved in a fatal crash on an Indian reservation is between 3 pm - 9 pm. Almost one-third (32%) of all crashes in these special jurisdictions occurred during this six hour period. Over sixty percent of all crashes on reservations occurred between 3 pm and 3 am (Table 3). The time-periods listed by highest percentage of crashes on reservations are (Figure 5):

6 pm – 9 pm (1,003 crashes, 17%),	3 pm – 6 pm (907 crashes, 15%),
Midnight – 3 am (854 crashes, 14%),	9 pm – Midnight (826 crashes, 14%),
3 am – 6 am (602 crashes, 10%),	Noon – 3 am (598 crashes, 10%),
6 am – 9 am (506 crashes, 9%),	9 am – noon (454 crashes, 8%)

Nationally, the picture is very similar; the hours with the highest incidence of fatal crashes are:

6 pm – 9 pm (just over 16%),	9 pm – midnight (16%),
3 pm – 6 pm (16%),	Midnight – 3 am (under 15%),
Noon – 3 pm (12%),	9 am – noon (9%),
6 am – 9 am (just over 8%)	3 am – 6 am (just under 8%).

The day and hour combination that appears most deadly on reservations is the midnight to 3 am time-period on Saturday, with 259 crashes having occurred during the years covered by this report.



Source: NCSA, NHTSA, FARS 1975 - 2002

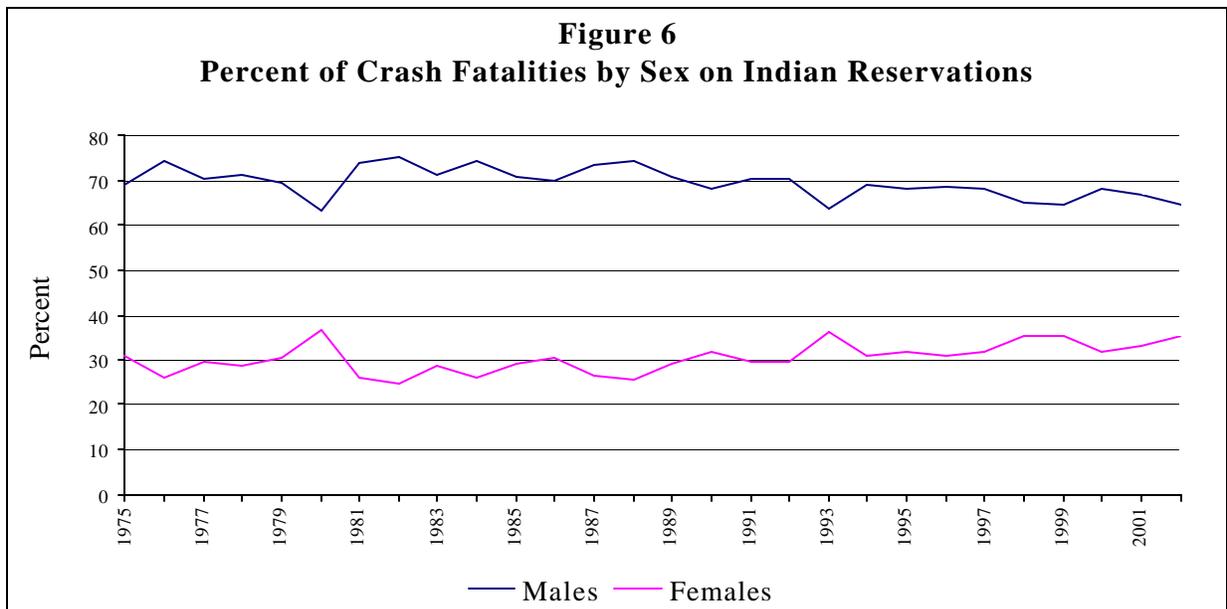
## 4.2 Fatalities

From 1975 through 2002, 7,093 people lost their lives in motor vehicle crashes on Indian reservations, compared to 1.2 million fatalities in the U.S. Of this total, 3,322, or about 47 percent, were drivers. Nationally, the percentage of drivers killed is much higher, at 58 percent. Fatally injured passengers (including unknown occupant types), numbered 2,717, or 38 percent of reservation motor vehicles fatalities. Across the nation, a smaller percentage of passengers are killed (26%). At the same time, 1,001 or 14 percent of all motor vehicle fatalities were pedestrians. This percentage is the same as that of pedestrians killed in the nation (14%). Based on these totals, fatal motor vehicle crashes on Indian reservations kill an average of 253 people per year, of which 119 are drivers, 97 are passengers and 36 are pedestrians.

### 4.2.1 Fatalities by Sex

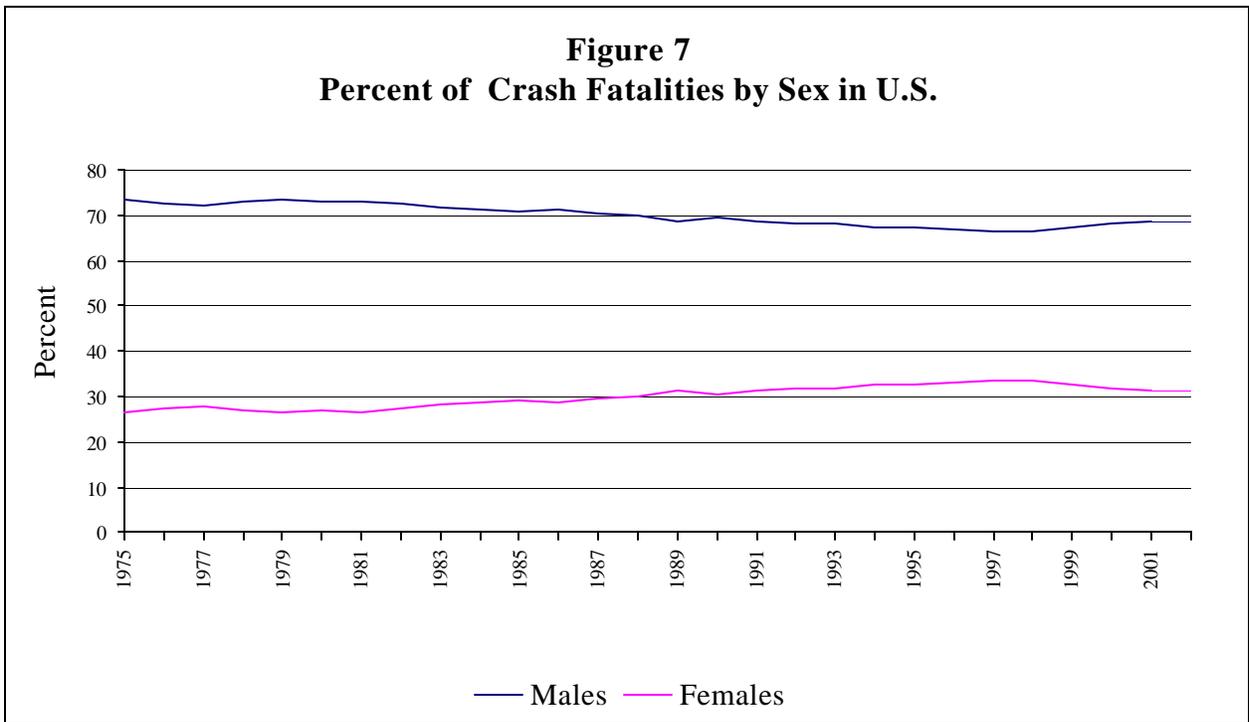
Almost 2.3 times as many males were killed in motor vehicle crashes on Indian reservations as females. A similar proportion is exhibited in male to female fatalities in the nation (2.3 to 1). There appears to be a decline in the percentage of male fatalities and an increase in the percentage of female fatalities on reservations (Figure 6). A similar pattern emerges for the United States as a whole (Figure 7). Since 1975, motor vehicle crashes on reservations have resulted in 4,916 males (69% of crash fatalities), and 2,176 females (31% of crash fatalities) were killed. This is an average of 176 males and 78 females killed in reservation crashes per year.

Analysis by person type reveals that of the drivers killed, 2,511, or 76 percent, were male compared to 811, or 24 percent, female. The percentage of drivers killed in the nation breaks down to 78 percent males to 22 percent females. In an average year, 119 drivers were killed, of those drivers, 90 were male and only 29 were female. In other words, for every female driver killed in a crash, 3.1 male drivers were killed.



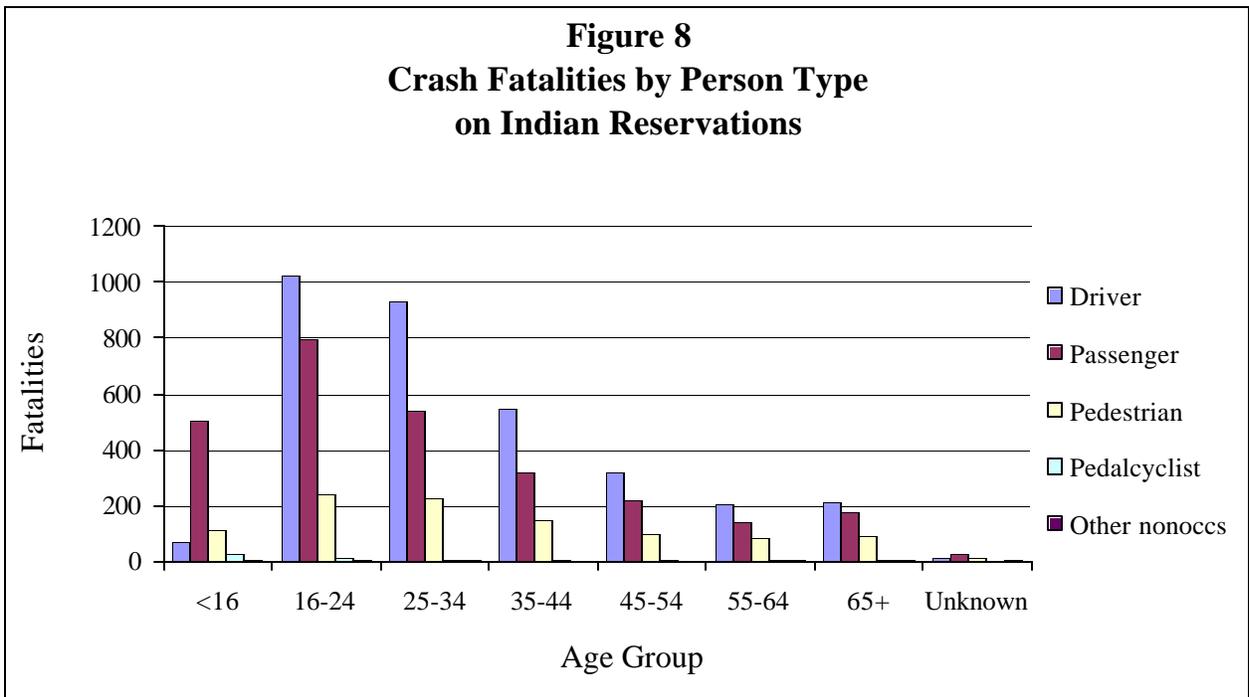
Source: NCSA, NHTSA, FARS 1975 – 2002

**Figure 7**  
**Percent of Crash Fatalities by Sex in U.S.**



Source: NCSA, NHTSA, FARS 1975 – 2002

**Figure 8**  
**Crash Fatalities by Person Type on Indian Reservations**



Source: NCSA, NHTSA, FARS 1975 – 2002

## 4.2.2 Fatalities by Age Group

Almost 63 percent (4,490) of fatally injured persons in crashes on reservations were younger than 35 years of age. Nationally, about 57 percent of motor vehicle fatalities were under the age of 35. Twenty-nine percent (2,078) of the fatalities on Indian reservations were persons between the ages of 16 and 24. This is the same as the nationwide percentage for fatalities of the same age group. In comparison, persons 65 years old and older contributed less than 7 percent (473) to the total number of fatalities on reservations while contributing almost 14 percent of nationwide fatalities.

The number of fatalities by age group and person type gives a clearer picture of the fatalities on Indian reservations (Figure 8). Occupants killed in motor vehicle crashes made up 85 percent of the total fatalities. Fifty-five percent (3,322) of the occupant fatalities were drivers and 45 percent (2,717) were passengers. Distribution of occupant fatalities by age group reveals that in the driver category, a total of 1,097 (33%) of the fatally injured drivers were less than 25 years old, and an additional 933 drivers (28%) were between 25 and 34 years old (Table 4). Drivers under the age of 35 comprise over 61 percent of all driver fatalities and 34 percent of all occupant fatalities on Indian reservations since 1975. Passengers under 25 years old contributed 48 percent (1,305) to the total number of passengers fatally injured, while passengers between 25 and 34 years old contributed another 20 percent (537). Passengers under 35 years old made up 68 percent of all passengers killed in motor vehicle crashes on Indian reservations. At the other end of the spectrum, occupants 65 and older killed in crashes on reservations accounted for 6 percent of all occupant fatalities in motor vehicle crashes, with older drivers contributing almost 3 percent (208) and older passengers contributing less than 3 percent (176) of all motor vehicle fatalities on Indian reservations.

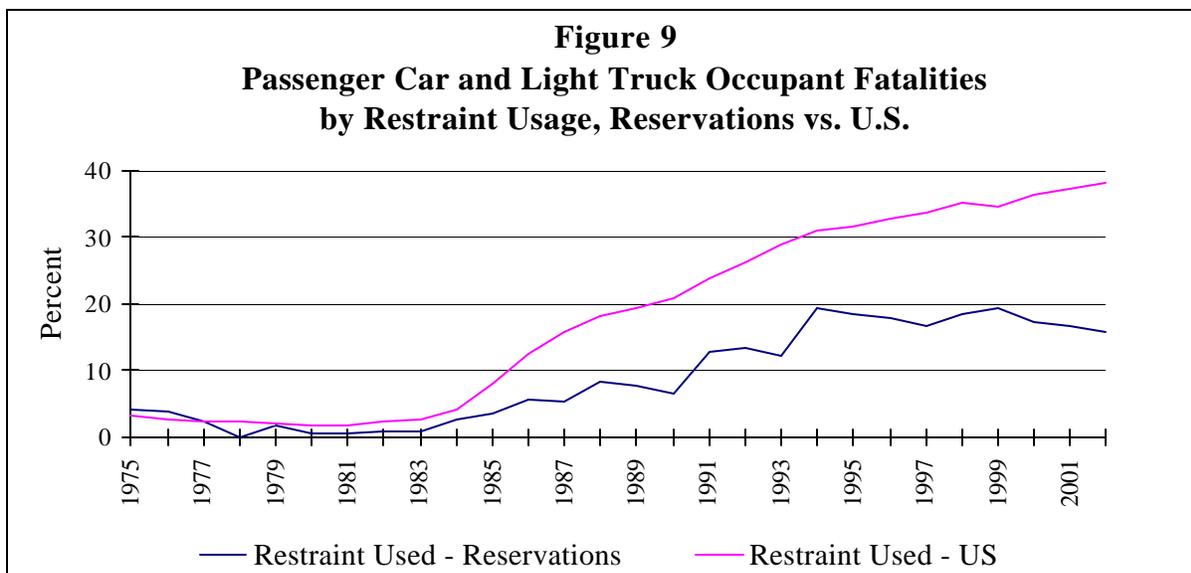
Age Group	Occupants		Nonoccupants		Total
	Driver	Passenger	Pedestrian	Pedalcyclist & Other	
< 16	70	506	110	24	710
16-24	1,027	799	240	12	2,078
25-34	933	537	226	6	1,702
35-44	548	315	145	2	1,010
45-54	317	219	96	3	635
55-64	207	142	85	3	437
65+	208	176	87	2	473
Unknown	12	23	12	1	48
<b>Total</b>	<b>3,322</b>	<b>2,717</b>	<b>1,001</b>	<b>53</b>	<b>7,093</b>

Source: NCSA, NHTSA, FARS 1975 – 2002

There have been 1,047 non-occupants killed on reservations since 1975. This represents just over 15 percent of all fatalities. Fifty-nine percent of these non-occupant fatalities were under the age of 35. The largest group of fatally injured non-occupants was pedestrians, which accounted for nearly all (96%) of the non-occupant fatalities. Young people under the age of 35 accounted for a majority (58%) of the pedestrian fatalities.

### 4.3 Restraint Use

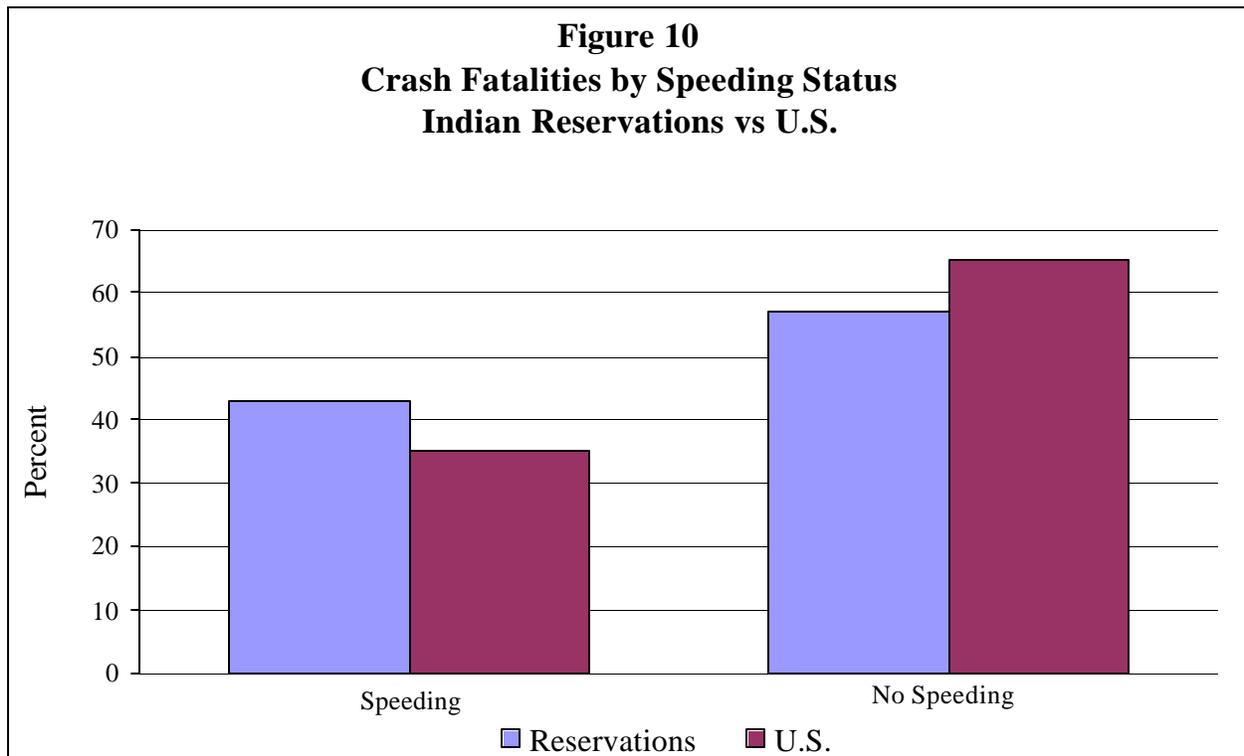
Since 1975, 5,200 occupants of passenger cars and light trucks were killed in motor vehicle crashes on Indian reservations. Over 76 percent (3,969) of the fatally injured occupants were not restrained at the time of the crash. An average of 147 unrestrained occupants of passenger vehicles were killed annually when involved in a fatal crash on a reservation. At the same time, only 18 restrained occupant fatalities were recorded per year. In 1985, almost 89 percent of 142 passenger vehicle occupants killed were not wearing restraints. Since then, restraint usage has increased (Figure 9). Based on findings of the National Occupant Protection Use Survey, the national observed belt use rate in 1994 was 58 percent. That same year, 31 percent of passenger vehicle occupants killed in the nation were wearing restraints compared to 19 percent of the occupants of this vehicle type involved in fatal crashes on Indian reservations. In 1996, the national observed belt use rate in fatal crashes was 61.3 percent. Nationally, 33 percent of passenger vehicle occupant fatalities were restrained compared to 18 percent of passenger vehicle occupants in Indian reservation fatal crashes. In 1998, the national observed rate was 68.9 percent. Across the nation, 35 percent of passenger vehicle occupant fatalities were restrained while 19 percent of the passenger vehicle occupant fatalities on Indian reservations were. In 2002, the national observed rate was 75 percent. Across the nation, 38 percent of passenger vehicle occupant fatalities were restrained while 16 percent of the passenger vehicle occupant fatalities on Indian reservations were. These comparisons tell us that restraint usage by passenger vehicle occupants on reservations continues to run behind the national restraint usage rate and the gap is widening.



Source: NCSA, NHTSA, FARS 1975 – 2002

## 4.4 Speeding

On Indian reservations, an average of 108 lives were lost in 89 crashes every year since 1975 because of speeding. Speed-related crashes accounted for more than 42 percent (2,501) of all motor vehicle crashes on reservations (5,962). Figure 10 shows that almost 43 percent (3,044) of the 7,093 lives lost in fatal motor vehicle crashes on Indian reservations were the result of someone exceeding the posted speed limit or driving too fast for conditions. In the nation, speed-related crashes accounted for 34 percent of all fatal crashes and speed was involved in 35 percent of all fatalities in crashes. In multi-vehicle crashes, at least one of the drivers involved was speeding. (It is not necessary for the fatally injured person and the speeding driver to be in the same vehicle for a crash to be speed-related, except in the case of single-vehicle crashes.) The seventy-two percent of people (2,083) that were killed in speed-related crashes on reservations were involved in a single-vehicle crash. This is almost 10 percent more than the 63 percent of people killed across the nation in speed-related single-vehicle crashes

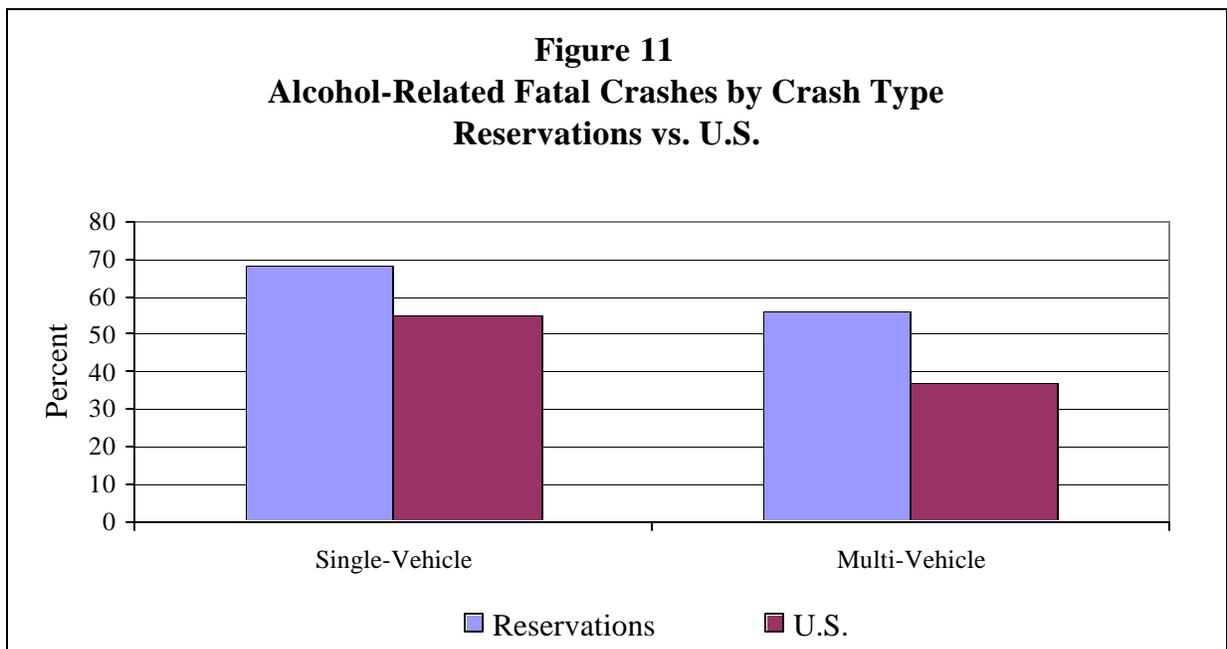


Source: NCSA, NHTSA, FARS 1975 - 2002

## 4.5 Alcohol

### 4.5.1 Crashes

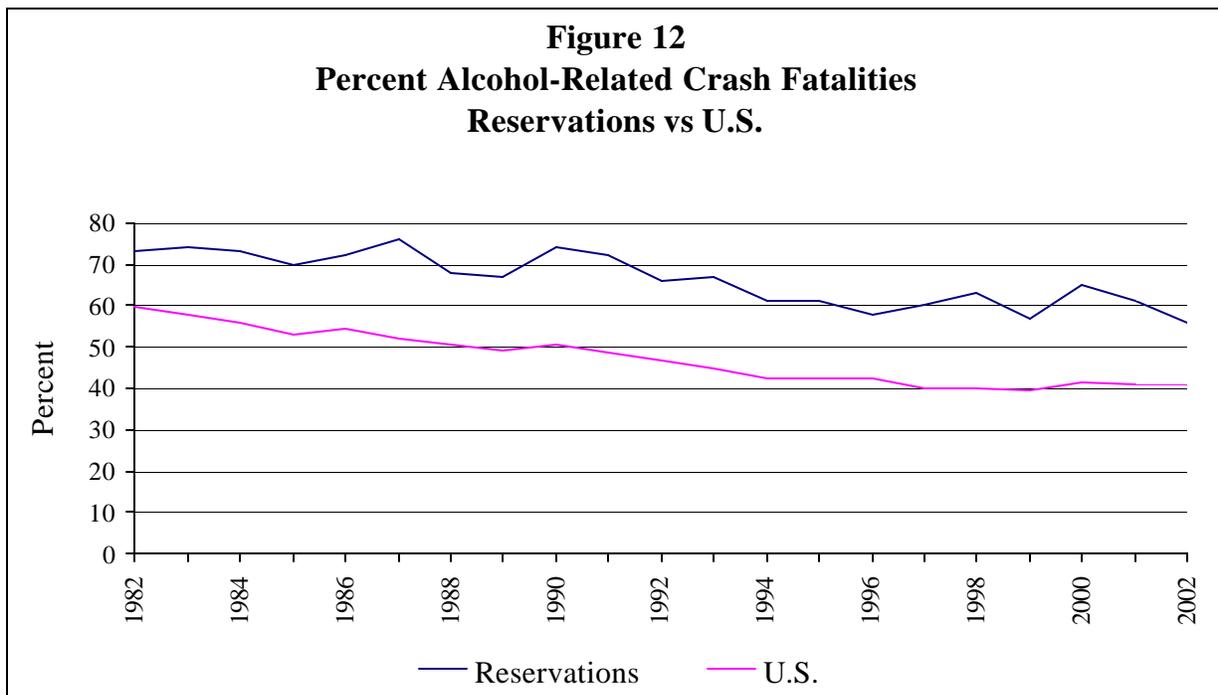
Since 1982 (the year that collection of alcohol data was introduced to the FARS database), 4,592 fatal crashes have occurred on Indian reservations. Utilizing a new imputation methodology developed by NCSA and introduced in 2001, an estimated 65 percent (2,992) of the crashes that occurred during this time period, (1982-2002), were alcohol related (Table 5). Nationally, only 47 percent of the total crashes during this same time period were alcohol related. This is an 18 percent difference in alcohol involvement during the same period. An alcohol-related fatal crash is defined by the National Highway Traffic Safety Administration as a crash in which either a driver or a non-occupant had a blood alcohol concentration of 0.01 grams per deciliter (g/dl) or greater. In the 3,414 single-vehicle crashes on reservations since 1982, 68 percent (2,327) were alcohol related (Figure 11). In comparison, 1,178 multi-vehicle fatal crashes occurred on reservations and only 56 percent (665) involved alcohol. Nationally, only 55 percent of single-vehicle crashes and 37 percent of multi-vehicle crashes were alcohol related. Through the years, the percentage of alcohol-related crashes has dropped on reservations about 17 percent (72% in 1982 to 55% in 2002), whereas in the nation, an 18 percent decrease has occurred (59% in 1982 to 41% in 2002). The highest rate of alcohol-related crashes was recorded in 1987 (153 of 201). That year, over 76 percent of all crashes on reservations involved alcohol. The lowest rate was recorded in 1996, when only 55 percent (146 out of 264) of crashes were alcohol related. This rate was matched in 2002 when 152 out of 276 (55%) were alcohol related. Sixty-five percent (1,955 out of 2,992) of alcohol-related crashes on reservations happened at night (6:00 pm – 6:00 am). Seventy-seven percent of the nation's alcohol-related crashes occurred at night. The single most deadly period was between midnight and 3:00 am. During this period, 88 percent (562 of 636 crashes) of the fatal crashes involved alcohol. The same can be said for the nation as a whole where 83 percent of crashes involved some level of alcohol.



Source: NCSA, NHTSA, FARS 1982 - 2002

<b>Table 5</b>			
<b>Alcohol-Related Fatal Crashes by Time of Day</b>			
<b>Time of Day</b>	<b>Crashes</b>	<b>% Alcohol Related - Reservations</b>	<b>% Alcohol Related- U.S.</b>
Midnight-3 am	636	88	83
3 am-6 am	456	84	69
6 am-9 am	409	50	20
9 am-2 am	344	38	14
Noon-3 pm	471	46	19
3 pm-6 pm	708	53	31
6 pm-9 pm	748	69	53
9 pm-12 pm	628	79	70
Unknown	192	56	72
<b>Total</b>	<b>4,592</b>	<b>65</b>	<b>47</b>

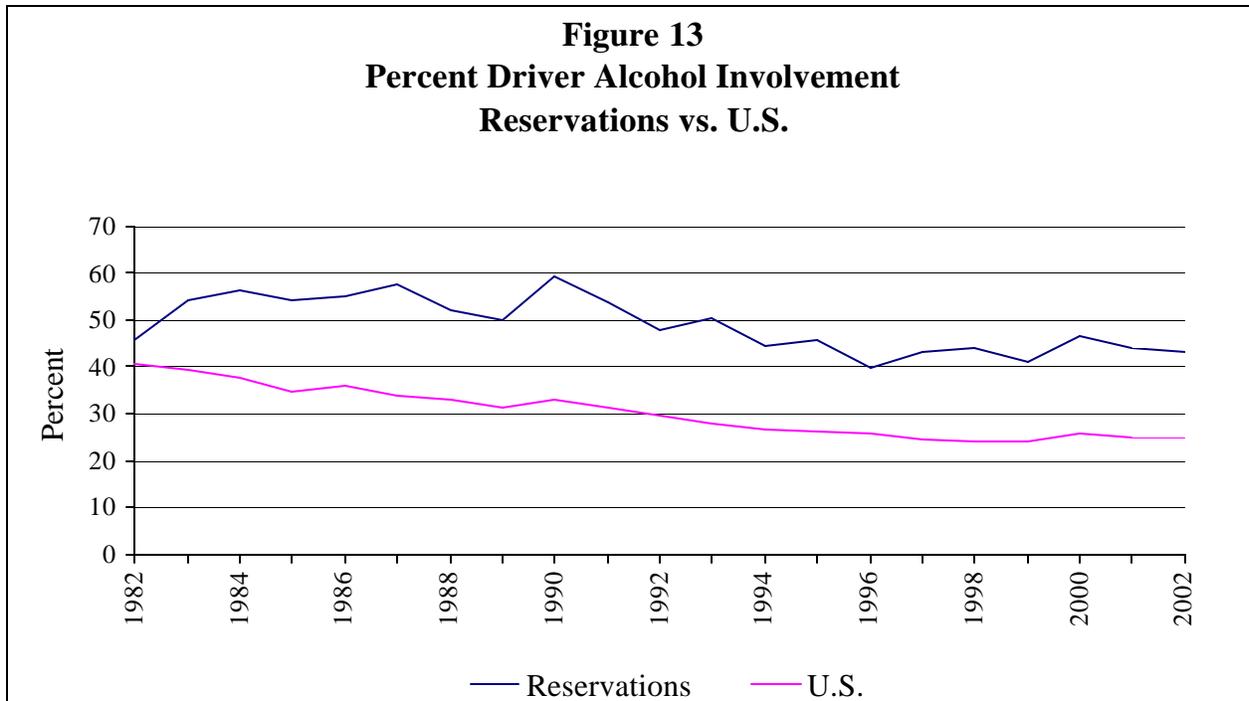
Source: NCSA, NHTSA, FARS 1982 – 2002



Source: NCSA, NHTSA, FARS 1982 – 2002

## 4.5.2 Fatalities

Since 1982, 3,554 persons have been killed in crashes on reservations where alcohol was involved since 1982. These fatalities represented 66 percent of all fatalities in motor vehicle crashes on reservations during this period (5,417). Nationally, only 47 percent of fatalities were alcohol-related. Alcohol involvement for persons killed in reservation crashes reached a high of 76 percent in 1987 (Figure 12), while the nation's rate of alcohol involvement has never reached more than 60 percent, and, in most years, has decreased.



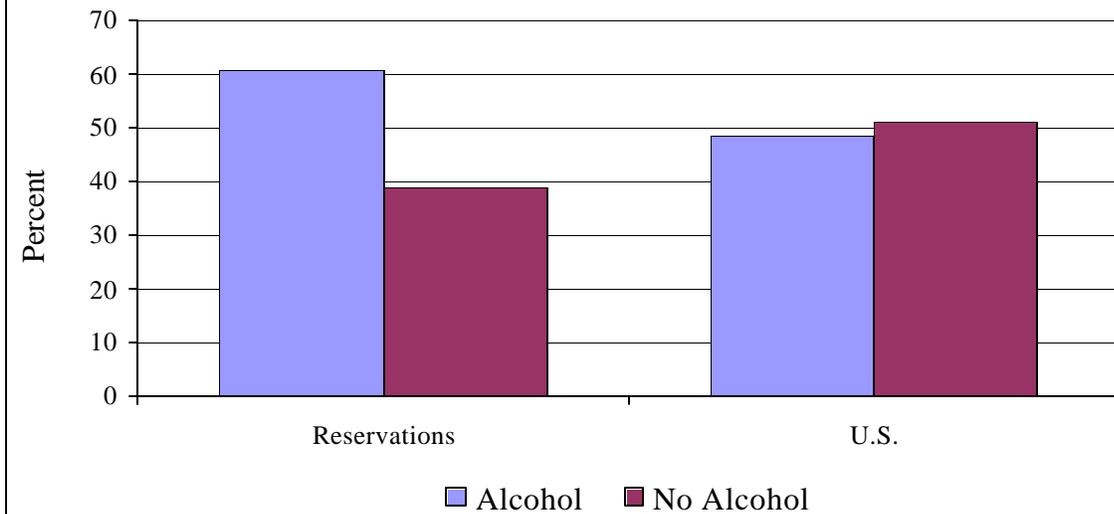
Source: NCSA, NHTSA, FARS 1982 – 2002

## 4.5.3 Drivers Involved

Of the 5,705 drivers involved in fatal crashes on reservations since 1982, almost half (48%) had a BAC of 0.01 or more. Nationally, only 30 percent of drivers involved in fatal crashes had BAC levels of 0.01 or more.

Sixty-one percent of drivers involved in crashes at night (6 pm to 6 am) on reservations had some level of alcohol, compared to 49 percent of the nighttime drivers across the country (Figure 14). More important to note is the fact that almost 3 out of 4 drivers (73%) involved in crashes between midnight and 3 am had BAC levels of 0.01 or more. Comparable statistics for the nation show that 2 out of 3 (66%) drivers involved in crashes during the same period had BAC levels of 0.01 or more (Table 6).

**Figure 14**  
**Drivers Involved in Fatal Crashes at Night by Alcohol**  
**Involvement**  
**Reservations vs. U.S.**



Source: NCSA, NHTSA, FARS 1982 - 2002

**Table 6**  
**Drivers Involved in Fatal Crashes by Time of Day and**  
**% Alcohol Involvement (BAC=0.01+)**

Time of Day	Number of Drivers Involved		Drivers Involved with BAC 0.01+ Reservations		Drivers Involved with BAC 0.01+ U.S.	
	Reservations	U.S.	Number	%	Number	%
Midnight-3 am	735	148,004	539	73	97,228	66
3 am- 6 am	507	77,659	3,634	72	40,533	52
6 am- 9 am	516	112,986	196	38	13,003	12
9 am-Noon	328	80,604	91	28	6,639	8
Noon- 3 pm	639	162,606	213	33	17,656	11
3 pm-6 pm	945	210,870	376	46	38,493	18
6 pm-9 pm	689	130,826	298	43	38,552	29
9 pm-Midnight	757	170,676	426	56	80,907	47
Unknown	589	105,007	256	43	31,134	30
Total	5,705	1,199,308	2,757	48	364,144	30

Source: NCSA, NHTSA, FARS 1982 - 2002

## 5. CONCLUSIONS

This report was written to examine the characteristics of fatal motor vehicle crashes on Indian reservations as reported to the National Center for Statistics and Analysis (NCSA), Fatality Analysis Reporting Systems (FARS). Analysis using the FARS reveals that since 1975:

- The number of fatal motor vehicle crashes on Indian reservations increased by 52.5 percent compared to a decrease of 2.2 percent for the nation,
- 58 percent of all fatal motor vehicle crashes in the U.S. were single vehicle crashes while 73 percent of the crashes on Indian reservations involved a single vehicle.
- 44 percent of all fatal crashes on reservations occurred on Saturday or Sunday while just 36 percent of all fatal crashes in the nation occurred on the same days.
- 32 percent of all fatal crashes in the nation occurred between 3 pm and 9 pm and the same is true for reservations.
- Drivers made up 47 percent of fatalities in crashes on Indian reservations compared to 58 percent of those killed in crashes in the U.S.
- Fatally injured passengers made up 26 percent of the nation's crash fatalities compared to 38 percent of crash fatalities on Indian reservations.
- Pedestrians made up 14 percent of persons killed in fatal crashes on reservations and in the nation.
- 63 percent of the fatalities in crashes on reservations were under 35 years old compared to 57 percent of those in the nation.
- 33 percent of driver fatalities on reservations were under 25 years old compared to 31 percent of the drivers in the nation.
- 76 percent of the fatally injured passenger vehicle occupants on reservations were unrestrained at the time of the crash compared to 68 percent of passenger vehicle passengers killed in the nation.
- Almost 43 percent of the lives lost on reservations were in speed related crashes while 35 percent of the nation's fatalities were speed-related.
- Since 1982, 65 percent of all crashes on reservations were alcohol related while only 47 percent of the nation's fatal crashes involved alcohol.
- 88 percent of crashes on reservations between midnight and 3 am since 1982, involved alcohol compared to 83 percent during the same time period nationally.
- 48 percent of drivers involved in crashes on reservation since 1982 had a BAC of 0.01 or more compared to just 30 percent of drivers involved in crashes across the nation.

When comparing more recent changes between 2001 and 2002, analysis also reveals a number of noteworthy results. In 2002, the number of crashes (276) on reservations increased by 25 percent over the 2001 total (226). In the nation, the number of crashes increased by only 1 percent from 2001 to 2002. This also represents an increase of 5 percent over the previous high of 264 that was reached in 1996. It is believed that increased interest in the reporting levels of reservations has resulted in better reporting of crashes in these areas. Rates need to be analyzed using vehicle-miles-of-travel, population, licensed drivers and/or registered vehicles as well as the reporting levels within the NHTSA regions to better understand what is happening.

In 2002, 35.5 percent of fatalities in fatal crashes on reservations were female, a slight increase over the percentage of female fatalities in 2001 (33.1%), while the percentage of female drivers killed in these crashes decreased from 34.7 percent in 2001, to 28.4 percent in 2002.

Restraint usage, speeding, and alcohol involvement are three big causes of concern on reservations. The restraint usage rate, for the most recent year, 2002, is 16 percent for fatally injured occupants of passenger cars and light trucks. This compares unfavorably with the 38 percent restraint usage rate for the nation. Forty-one percent of fatal crashes on reservations in 2002 involved speeding compared to 31 percent in the nation. Forty-two percent of the fatalities in crashes were the result of a crash where at least one vehicle was speeding. This is 10 percent more than the 32 percent for the nation. Similarly, 56 percent of the fatalities on reservations in 2002 were the result of an alcohol-related crash compared to 41 percent in the nation. Drivers involved in alcohol-related crashes on reservations (48%) are still about 18 percent higher than the drivers involved in alcohol-related crashes in the nation (30%) as a whole.

Specific safety, education, and enforcement programs need to be established primarily for high risk Native Americans (under 35 years old), who make up 63 percent of the fatalities in motor vehicle crashes on Indian reservations. In addition, improvements in data and record keeping at the Federal and state level could result in better data for the FARS system.

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