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**Michigan Fatal and Serious-Injury  
Traffic-Crash Patterns:  
1993-1997**

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16. Abstract This report details facts and figures relevant to a better understanding of possible causes of and prevention implications for deaths and serious injuries due to traffic crashes in the state of Michigan during the period January 1993 through December 1997. Select results in brief: <ul style="list-style-type: none"> <li>• Statistical analyses suggest that the performance goals selected by OHSP are appropriate.</li> <li>• Michigan experienced significant drops in fatal or serious-injury (KA) crash frequencies and rates in 1996 and 1997 after three years of relative stability.</li> <li>• It is reasonable to target all drivers age 16-20 and male drivers age 21-34 years as special targets to help OHSP achieve its traffic safety goals.</li> <li>• The summer months of June, July, and August are particularly good targets for program efforts.</li> <li>• The vast majority of KA crashes occur on city/county roads, thus it is rational to continue to focus efforts on reducing the KA crash count on these city/county roads.</li> <li>• By far the largest vehicle group involved in KA crashes is passenger cars.</li> <li>• Because of the hazard drivers age 14-18 present to themselves and others as demonstrated by their crash rates, this is an important, if small, target group.</li> <li>• Drivers age 70 and over represent only 10% of all KA crash cases and do not have a higher crash rate per driver than the 'average' driver. Therefore, this is not a promising target group for achieving the overall traffic safety goals set by OHSP.</li> <li>• Males age 21-34 have the largest number of crashes and highest rates of KA-HBD 'had-been-drinking' crash involvement, and therefore are an important target group.</li> <li>• The largest reductions in KA-HBD crashes have occurred on months and days that have had the historic highs. The effect seems to be toward leveling off month-to-month, day-to-day variation. This may mean that we are beginning to see the boundaries of the "hard-core" problem with respect to KA-HBD crashes.</li> </ul>					
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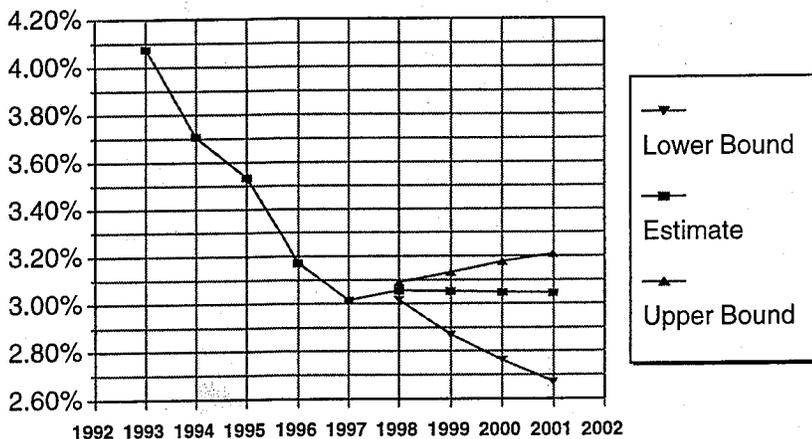
# Executive Summary

## Statistical Trend Analyses

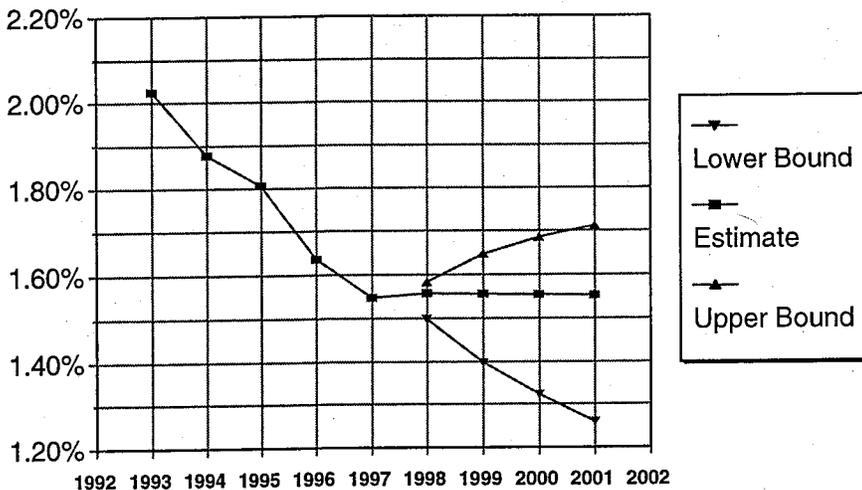
In our 1998 report, the focus of this section was on examining Michigan's fatal crash trends to determine if there was an upward swing in traffic crash fatalities beginning in 1993. As noted in that report, the pattern of crash fatalities in the period 1993-95 did not differ from pre-1993 levels.

This year, the focus of the statistical trend analyses was shifted to examine trends related to two central goals for OHSP — namely reducing the proportion of fatal and severe injury (KA) crashes to 3% by the year 2001 and reducing the proportion of crash-involved occupants who experience fatal or serious (KA) injury to 1.5% by the year 2001.

### Proportion of Crashes Resulting in KA Injury 1993-1997



### Proportion of Occupants Receiving KA Injury 1993-1997



The statistical question in 1998 involved the test of a specific scientific hypothesis (i.e., were fatals higher in 1993-1995 than in previous years). The statistical methods used to calculate the predictions presented here are nearly identical to those used in the previous report. Data on the proportion of KA crashes or injuries for each month for the period 1993-1997 were included in a statistical time-series model that estimated what Michigan could expect to experience in the future, based on the statistical experience observed in the data. These statistical procedures result in data describing the "best" estimate of what is expected, as well as 95% confidence limits. These limits describe the range within which we can be 95% confident that the future KA crash and injury rates will fall if there is no change in the statistical pattern (like would be caused by passing a standard enforcement belt law).

The charts to the left show the proportion of crashes resulting in KA injury and the proportion of crash-involved occupants experiencing KA injury for the period 1993-1997 and predicted proportions for 1998-2001.

Because the general shape and statistical predictions for both proportions examined here are nearly identical, descriptions in the following discussion apply to both unless otherwise noted.

The charts show a general decline in the proportion of KA crashes and crash-involved persons experiencing KA injury from 1993 to 1997. Predictions about future proportions show a slight increase in these proportions from 1997 levels may be anticipated. Based on the statistical analyses, we cannot count on a continuation of the current trend to achieve the proposed goals of reducing the proportion of fatal and severe injury (KA) crashes to 3% by the year 2001 and to reduce the proportion of crash-involved occupants who experience fatal or serious (KA) injury to 1.5% by the year 2001 without some change to further reduce these numbers. An examination of the 95% confidence levels shows that we should not be surprised if (absent some new change to the environment) we see a slight increase in these proportions, or even a modest decrease in the near term. However, the "best estimate" predictions from these statistical models suggest that continued efforts will be required to achieve the current goals.

How do these findings impact OHSP planning? First, the statistical analyses suggest that the goals selected by OHSP are appropriate and rational. The goals are not beyond what one could expect to achieve given the efforts that can be exerted by OHSP and its partners, yet the goals appear to be beyond that which could be expected to occur in the absence of new program efforts from OHSP. Furthermore, if the apparent decline in these proportions from 1993 to 1997 is due in part to OHSP and partner efforts, then it may well be the case that OHSP and its partners must not only continue their current program efforts, these efforts will need to be increased in intensity, focus, or efficiency to achieve the selected goals. Of course, if the efforts that caused the apparent downward trend are continued, it is well within the realm of statistical probability that the lower bound of predictions will hold true, suggesting the goals are achievable without an increased program effort.

The new focus within OHSP on specific reductions in the proportion of crashes that result in KA injury and the proportion of crash-involved persons who experience KA injury as goals to be achieved should help OHSP effectively select, design, and evaluate programs. Not only do their goals appear to be rational statistically (as evidenced in the preceding discussion), but these goals are appropriate for practical reasons. The most common goal for traffic safety programs has traditionally been fatal rate per 100 million miles of travel (VMT). While this goal remains important to OHSP, their ability to achieve that goal is not in their own hands in large part. That is, while OHSP may be successful in reducing the number of persons killed in traffic crashes through their programming efforts, this may not always be evident in the rate per VMT if travel patterns change during the same period. On the other hand, the measure of the proportion of persons experiencing fatal or serious injury is not subject to change in a related measure that is outside the sphere of influence for OHSP, making it an excellent candidate for a central goal. These goals can be achieved through crash prevention efforts and occupant safety promotion efforts, both of which form the core of OHSP programs.

## Key Results

Number and Rate of Fatal and Serious Injury Crashes					
Year	Number of Crashes	Rate per 100 Million VMT	Rate per 1000 Registered Vehicles	Rate per 1000 Population	Rate per 1000 Licensed Drivers
93	14,826	17.302	1.924	1.569	2.273
94	14,762	17.325	1.869	1.555	2.236
95	14,890	17.373	1.846	1.559	2.231
96	13,820	15.765	1.673	1.445	2.071
97	12,843	14.393	1.534	1.341	1.881

The table shown above lists the number of crashes in which the most serious injury noted on the police crash report was a fatal or serious (A-level) injury (henceforth identified in the text as KA crashes) along with associated rates as indicated. This table shows that Michigan experienced significant drops in KA crash frequencies and rates in 1996 and 1997 after three years of relative stability. From 1995 to 1996 and again from 1996 to 1997, each of these measures experienced a 7% to 10% decline. In other words, as the number of miles traveled, the number of registered vehicles, the licensed driver population, and the population overall increased the number of crashes resulting in a fatal or serious injury actually decreased.

OHSP has established performance goals based on the need to set objective, measurable, and specific goals that are sufficiently difficult to achieve so that complacency with the status quo does not set in. If in fact the observed declines in KA crashes and rates in 1996 and 1997 remain stable for the next year or two (that is we continue to observe 7-10% declines in KA crashes and rates), OHSP may want to consider reexamining the goals it has set for itself. However, it will probably be difficult for OHSP to sustain this level of change for more than 4-5 years (a total change from 1995 of 28% to 50%) without some significant change in programming efforts because future decreases will likely require new programming efforts targeting the increasingly hard to reach crowd.

Based on KA crash rate per 1000 licenced drivers and total number of crashes shown in the next table (abbreviated from the complete table that can be found in the report body), it would seem reasonable to target all drivers age 16-20 and male drivers age 21-34 years as special targets to help OHSP achieve its traffic safety goals. The 16-20 age group has the highest rate of KA crashes and higher crash counts than do the 55 and older age groups. The 21-34 male driver group has a high KA crash rate about the same as the 16-20 year old females, and also represents the single largest number of KA crashes for the groups examined. While the 55 and older group does represent an opportunity for change given the relatively flat or oscillating KA crash rates from 1993-1997, the number of crashes that these age groups represent is quite small compared to drivers under age 55. This means that even a large decline among the age 55 and above categories will have only a small effect on the overall crash numbers.

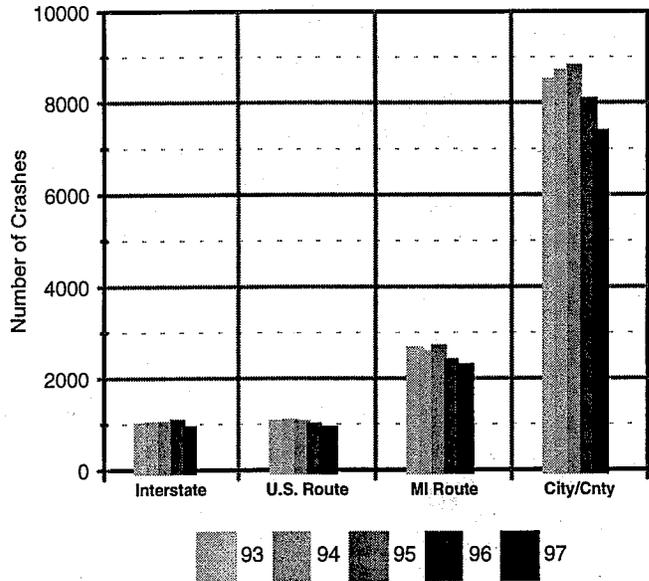
Fatal and Serious Injury Crash Frequency and Rates By Year, Age Group and Sex					
Driver Age	Sex	Year	Count	Rate per 1000 population	Rate per 1000 licensed driver
16-20 yrs.	F	93	1,029	3.156	4.086
		94	1,010	3.103	3.964
		95	1,040	3.154	4.001
		96	973	2.895	3.743
		97	881	2.272	3.279
	M	93	1,704	5.100	6.305
		94	1,732	5.187	6.395
		95	1,747	5.152	6.374
		96	1,594	4.548	5.816
		97	1,493	4.160	5.264
21-34 yrs.	F	93	1,587	1.545	1.664
		94	1,590	1.563	1.686
		95	1,557	1.557	1.679
		96	1,512	1.551	1.630
		97	1,401	1.517	1.562
	M	93	3,287	3.260	3.454
		94	3,214	3.251	3.411
		95	3,138	3.230	3.377
		96	2,805	2.945	3.019
		97	2,605	2.686	2.868

Data detailed in the report body suggest that the summer months (June, July and August) are particularly good targets for program efforts. More KA crashes occur during these months than any others and the number of crashes during these months has shown some stability over the last 3 years, suggesting that program efforts may have had less effect during these months than others. Of course during the summer months, Michigan has a considerable influx of out-of-state tourists. This may well be a large part of the reason that the numbers in the summer months have not declined as much as other months. This would suggest that in addition to targeting June-August, strategies should be developed to reach the out-of-state tourist with Michigan's traffic safety messages and programs.

**Fatal and Serious Injury Crashes  
by Highway Class and Year**

The vast majority of KA crashes occur on city/county roads. These also appear to be the roads that are experiencing the most significant decrease in crashes. It is rational to continue to focus efforts on reducing the KA crash count on these city/county roads.

By far the largest vehicle group involved in KA crashes is passenger cars (almost 10,000 KA crashes more than all other vehicle types combined). For this reason, crashes involving passenger cars should be the central focus of OHSP program efforts. Efforts targeting other vehicle types may well result in declines in KA crashes involving those vehicle types, but would not, in all probability, move the state markedly toward the OHSP goals, even if the declines were dramatic.



<b>Number and Rate of Fatal and Serious Injury Crashes Drivers age 14-18</b>		
<i>Year</i>	<i>Number of Crashes</i>	<i>Rate per 1000 Licensed Drivers</i>
93	2601	8.98
94	2792	9.48
95	2735	9.00
96	2513	8.27
97	2390	6.79

As can be seen in the table above, both the number of crashes and the rate per 1000 licensed drivers has decreased considerably for drivers age 14-18 since 1994.

<b>Number and Rate of Fatal and Serious Injury Crashes Drivers age 70+</b>		
<i>Year</i>	<i>Number of Crashes</i>	<i>Rate per 1000 Licensed Drivers</i>
93	1,261	2.16
94	1,290	2.13
95	1,348	2.14
96	1,333	2.11
97	1,234	1.89

The table immediately above shows that the number of KA crashes and rate per 1000 licensed drivers among drivers age 70 and older has decreased since 1995. Although KA crashes among this age group make up only 10% of all KA crashes, it is interesting to note that the 1997 rate of 1.89 per 1000 licensed drivers age 70 and over is nearly

However, the 1997 rate of 6.79 KA crashes per 1000 licensed drivers age 14-18 is quite a bit higher than the rate of 5.3 per 1000 licensed drivers for males age 16-20 years. Because of the hazard these drivers present to themselves and others as demonstrated by their crash rates, this is an important, if small, target group.

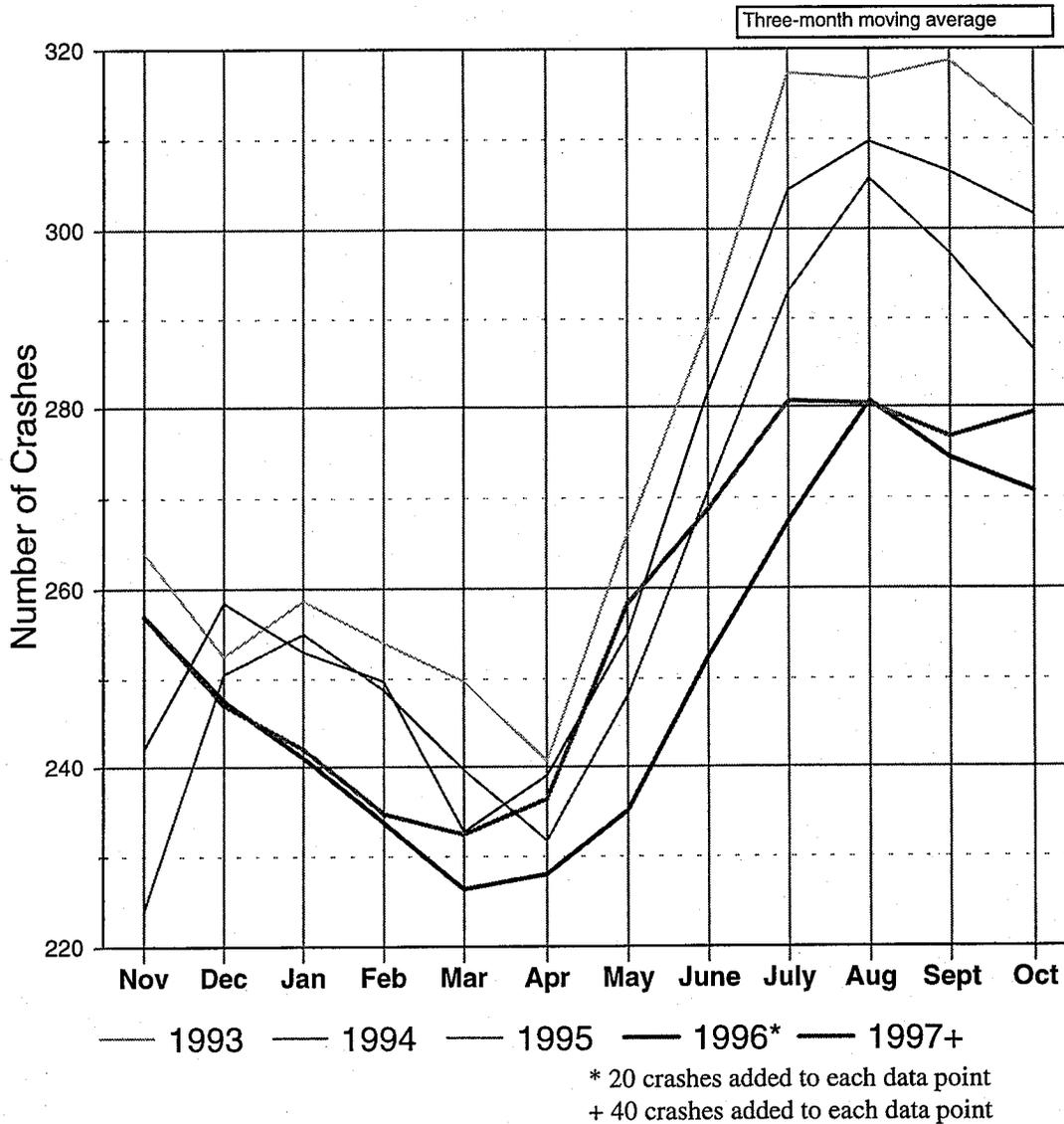
identical to the overall rate of 1.88 shown in an earlier table. At this point it should be noted that because this age group only makes up 10% of all KA crash cases, it is not a promising target group for achieving the overall traffic safety goals set by OHSP.

Indeed, a 40% decrease in KA crashes involving this age group (a seemingly unreachable goal barring some major, unforeseen policy change) probably would only result in only a 4% decrease in the overall rates established by OHSP as goals. However, it is equally important to note that this is a fast growing segment of the population and should be monitored closely to assess whether crash profiles for this group change as it expands in the future.

<b>Fatal or Serious Injury Crash Frequency and Rates 'Had-Been-Drinking' Crashes by Year, Age Group and Sex</b>					
<i>Age</i>	<i>Sex</i>	<i>Year</i>	<i>Number of Crashes</i>	<i>Rate per 1000 Population</i>	<i>Rate per 1000 Licensed Drivers</i>
16-20 yrs.	F	93	60	0.184	0.238
		94	59	0.181	0.232
		95	56	0.170	0.215
		96	64	0.190	0.246
		97	37	0.095	0.138
	M	93	303	0.907	1.121
		94	291	0.871	1.075
		95	296	0.873	1.080
		96	250	0.713	0.912
		97	221	0.616	0.779
21-34 yrs.	F	93	306	0.298	0.321
		94	306	0.301	0.324
		95	271	0.271	0.292
		96	261	0.268	0.281
		97	225	0.244	0.251
	M	93	1402	1.390	1.473
		94	1280	1.295	1.359
		95	1247	1.284	1.342
		96	1007	1.057	1.084
		97	1035	1.067	1.140
35-54 yrs.	F	93	200	0.153	0.160
		94	179	0.133	0.139
		95	215	0.156	0.163
		96	206	0.150	0.156
		97	176	0.123	0.129
	M	93	845	0.667	0.689
		94	822	0.632	0.652
		95	849	0.635	0.658
		96	763	0.558	0.591
		97	744	0.563	0.555

Male drivers (age 16-54) are the most significant 'at-risk' group for KA-HBD crash involvement because of their high frequency and rates of involvement. Within that rather large group, we can see that males age 21-34 have the largest number of crashes and highest rates of KA-HBD crash involvement. While the rates of involvement are not nearly so high, a considerable number of KA-HBD crashes involve male drivers age 35-54. Taken as a whole, the male driver age 21-54 represents the majority of the KA-HBD crash experience in Michigan. If inroads are to be made in achieving Michigan's traffic safety performance goals, it would seem that this is a target group that should not be ignored.

## Number of Fatal or Serious Injury 'Had-Been-Drinking' Crashes by Month and Year

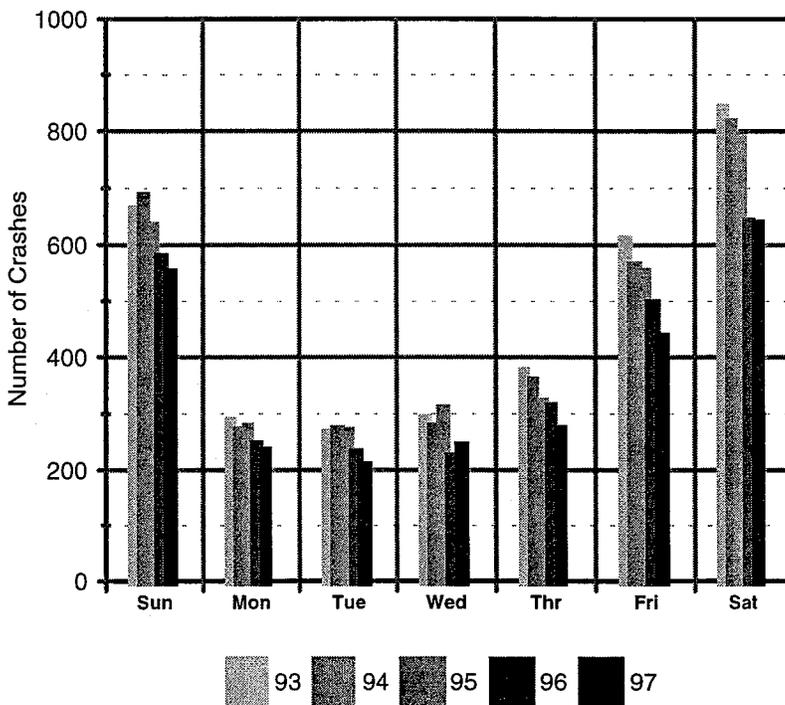


This chart shows an interesting phenomena that is repeated in the day of the week chart that follows. Specifically, it would appear that the largest reductions in KA-HBD crashes have occurred on months that have had the historic highs. In addition, the effect seems to be toward leveling off the month-to-month variation. One interpretation of this observation is that new laws and the efforts of OHSP and others have exerted their influence mainly during the periods that have been targeted for emphasis, namely the problem periods around certain events and holidays. While this is probably true (and everyone involved should take a bow), there may be another interpretation lurking here that has significant implications for future planning.

If in fact we are observing a flattening of the seasonal change that normally occurs from month-to-month, we may also be beginning to see the boundaries of the "hard-core" problem with respect to KA-HBD crashes. What I mean is that we may be seeing reductions in crashes caused by seasonal or occasional indulgence that can be controlled relatively easily through PI&E backed up by enforced laws, leaving us crashes caused by a group of persons for whom these pleas go unheeded. It also suggests that in addition to maintaining current PI&E and accompanying enforcement efforts (which will likely be necessary to prevent backsliding), new efforts targeting this less malleable group will be necessary to gain new change. If this were true, we would also see it in the day of week data, with frequencies of KA-HBD crashes that occur on the weekend declining at greater rates than weekdays.

Number of Fatal or Serious 'Had-Been-Drinking' Crashes by Day of Week and Year

As was the case for the chart showing KA-HBD crashes by month, this chart shows relatively large reductions in crashes on Friday, Saturday, and Sunday compared to the other days of the week. While one could expect the highest days to change the most, the fact that such small change was observed on Monday and Tuesday bolsters the argument that we may be beginning to see the boundaries of a hard-to-reach segment that will at least require continued close scrutiny.



In sum, it would seem that OHSP is well on its way to achieving its performance goals for traffic safety. However, the interpretations of the data presented here strongly suggest that in many respects each forward step will be more difficult to attain than the last. In addition to the potential difficulties on the horizon for impaired driving prevention, safety belt use may have reached a plateau at just over 70% that may not be significantly improved upon barring standard enforcement or some large, yet unseen and unfunded program. These statements are not made to invoke a spirit of doom. Indeed, these observations are intended to inform OHSP policy and program efforts and enable planners to foresee and hopefully prepare programming for shifts in the traffic safety challenges in the future.

In the following sections of the report, crash data are presented for each of the years 1993 through 1997 for various crash categories. Some of these data are presented in tables, some are presented in charts. The purpose for the analyses was to prepare data to assist OHSP in their program planning and evaluation processes. Using these data, this report identifies likely targets for future intervention based on maximizing the chance that OHSP will achieve its specified performance goals. In addition, trends that may tend to support or impede progress toward achieving the performance goals are also discussed.

## KA Crashes -- All Drivers

### Number and Rate by Year

<b>Number and Rate of Fatal and Serious Injury Crashes</b>					
<i>Year</i>	<i>Number of Crashes</i>	<i>Rate per 100 Million VMT</i>	<i>Rate per 1000 Registered Vehicles</i>	<i>Rate per 1000 Population</i>	<i>Rate per 1000 Licensed Drivers</i>
93	14,826	17.302	1.924	1.569	2.273
94	14,762	17.325	1.869	1.555	2.236
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96	13,820	15.765	1.673	1.445	2.071
97	12,843	14.393	1.534	1.341	1.881

The table shown above lists the number of crashes in which the most serious injury noted on the police crash report was a fatal or serious (A-level) injury (henceforth identified in the text as KA crashes) along with associated rates as indicated. This table shows that Michigan experienced significant drops in KA crash frequencies and rates in 1996 and 1997 after three years of relative stability. From 1995 to 1996 and again from 1996 to 1997, each of these measures experienced a 7% to 10% decline. In other words, as the number of miles traveled, the number of registered vehicles, the licensed driver population, and the population overall increased the number of crashes resulting in a fatal or serious injury actually decreased.

The implications of this finding on OHSP planning is unclear. On the one hand, it appears obvious that the traffic safety environment in Michigan has been getting considerably better in the last two years, and that reflects quite well upon OHSP and its program efforts. This would suggest that OHSP should continue doing what it has been doing. On the other hand, if OHSP is responsible in large part for the observed changes, it may well take a considerable extra effort to maintain the level of change observed in 1996 and 1997. That is, we may have achieved significant change among a portion of the population that is easy to reach relative to the population we have yet to reach. A parallel example could be seen in safety belt use. It took only the secondary enforcement belt law to reach about 45% use. Extra programming has raised belt use to just over 70%. But to reach that last 30% of the population will likely require a significant change (like a standard enforcement belt law) above and beyond the current program efforts. If in fact the declines in KA crashes observed in 1996 and 1997 are the result of reaching the audience most amenable to our message, then future decreases will require new programming efforts targeting the hard to reach crowd. However, we must not overlook the fact that the changes already effected in the population could be partially lost if the programming efforts that lead to these declines are not continued. These findings also have implications for setting OHSP performance goals.

OHSP has established performance goals based on the need to set objective, measurable, and specific goals that are sufficiently difficult to achieve so that complacency with the status quo does not set in. If in fact the observed declines in KA crashes and rates in 1996 and 1997 remain stable for the next year

or two (that is we continue to observe 7-10% declines in KA crashes and rates), OHSP may want to consider reexamining the goals it has set for itself. It will probably be difficult for OHSP to sustain this level of change for more than 4-5 years (a total change from 1995 of 28% to 50%) without some significant change in programming efforts because future decreases will likely require new programming efforts targeting the increasingly hard to reach crowd.

**Number and Rate by Age, Sex, and Year**

<b>Fatal and Serious Injury Crash Frequency and Rates By Year, Age Group and Sex</b>					
<i>Driver Age</i>	<i>Sex</i>	<i>Year</i>	<i>Count</i>	<i>Rate per 1000 population</i>	<i>Rate per 1000 licensed driver</i>
16-20 yrs.	F	93	1,029	3.156	4.086
		94	1,010	3.103	3.964
		95	1,040	3.154	4.001
		96	973	2.895	3.743
		97	881	2.272	3.279
	M	93	1,704	5.100	6.305
		94	1,732	5.187	6.395
		95	1,747	5.152	6.374
		96	1,594	4.548	5.816
		97	1,493	4.160	5.264
21-34 yrs.	F	93	1,587	1.545	1.664
		94	1,590	1.563	1.686
		95	1,557	1.557	1.679
		96	1,512	1.551	1.630
		97	1,401	1.517	1.562
	M	93	3,287	3.260	3.454
		94	3,214	3.251	3.411
		95	3,138	3.230	3.377
		96	2,805	2.945	3.019
		97	2,605	2.686	2.868

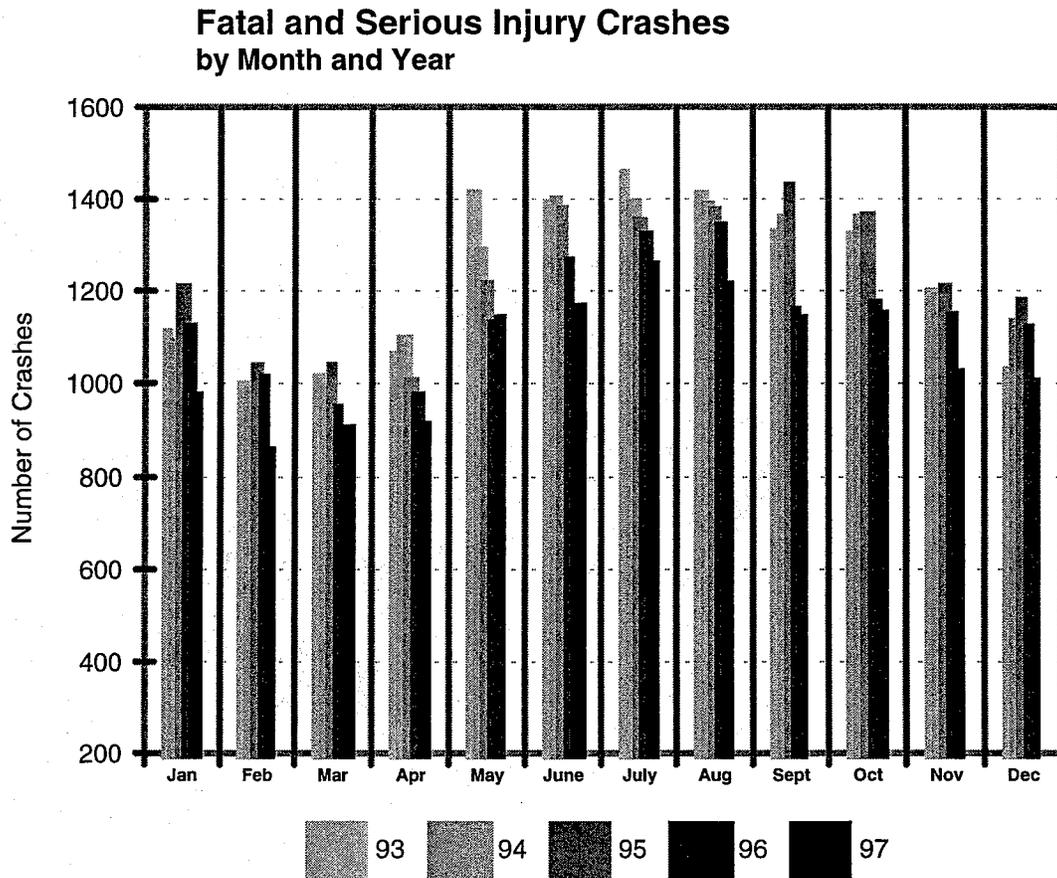
Fatal and Serious Injury Crash Frequency and Rates By Year, Age Group and Sex					
35-54 yrs.	F	93	1,279	0.975	1.025
		94	1,266	0.942	0.984
		95	1,374	0.994	1.042
		96	1,340	0.973	1.017
		97	1,191	0.829	0.871
	M	93	2,245	1.771	1.829
		94	2,315	1.781	1.836
		95	2,440	1.825	1.890
		96	2,243	1.641	1.737
		97	2,171	1.641	1.620
55-69 yrs.	F	93	387	0.647	0.740
		94	386	0.650	0.737
		95	384	0.650	0.730
		96	343	0.582	0.653
		97	323	0.572	0.597
	M	93	661	1.239	1.291
		94	624	1.175	1.217
		95	675	1.272	1.311
		96	609	1.152	1.183
		97	604	1.100	1.146
70+ yrs.	F	93	332	0.678	1.079
		94	371	0.746	1.156
		95	330	0.654	0.987
		96	343	0.671	1.026
		97	343	0.725	0.987
	M	93	462	1.516	1.682
		94	475	1.524	1.665
		95	520	1.631	1.756
		96	495	1.514	1.672
		97	460	1.712	1.504

The preceding table shows the same general patterns of decline in 1996 and 1997 from the relatively stable 1993-1995 period as were found for drivers overall. However, in this table we can see that the declines were not equally distributed across all age groups. Specifically, we can see that the largest changes were among drivers 16-20 years old and male drivers 21-34 years old and the smallest changes were among drivers age 55 and above.

Based on KA crash rate per 1000 licenced drivers and total number of crashes, it would seem reasonable to target all drivers age 16-20 and male drivers age 21-34 years as special targets to help OHSP achieve its traffic safety goals. The 16-20 age group has the highest rate of KA crashes and

higher crash counts than do the 55 and older age groups. The 21-34 male driver group has a high KA crash rate about the same as the 16-20 year old females, and also represents the single largest number of KA crashes for the groups examined. While the 55 and older group does represent an opportunity for change given the relatively flat or oscillating KA crash rates from 1993-1997, the number of crashes that these age groups represent is quite small compared to drivers under age 55. This means that even a large decline among the age 55 and above categories will have only a small effect on the overall crash numbers. However, we should remain aware that the over 55 year age group is growing dramatically, and that this group may well play a larger and larger role in Michigan's traffic safety picture in the future.

**Number by Month and Year**

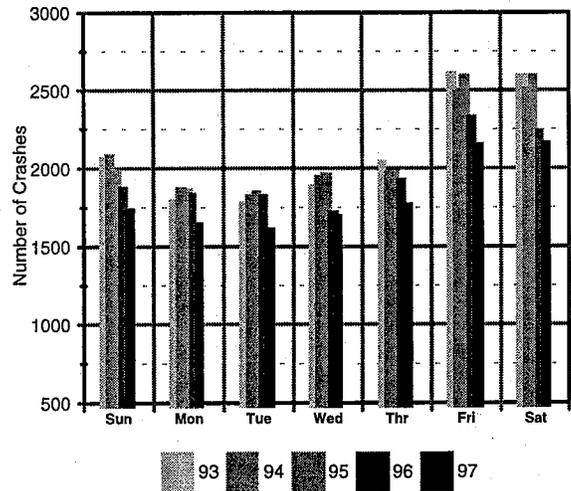


Based on the data from the preceding chart, it would seem that the summer months (June, July and August) are particularly good targets for program efforts. More KA crashes occur during these months than any other and the number of crashes during these months has shown some stability over the last 3 years, suggesting that program efforts may have had less effect during these months than others. Of course during the summer months, Michigan has a considerable influx of out-of-state tourists. This may well be a large part of the reason that the numbers in the summer months have not declined as much as other months. This would suggest that in addition to targeting June-August, strategies should be developed to reach the out-of-state tourist with Michigan's traffic safety messages and programs.

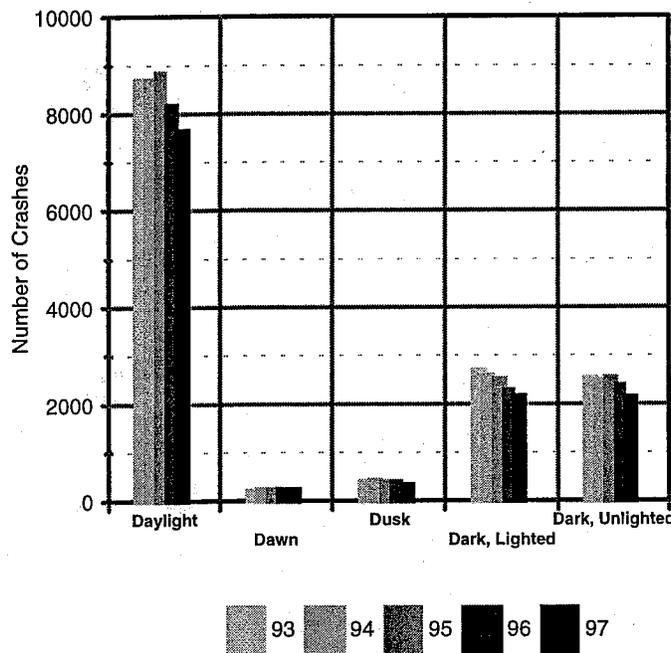
### Number by Day of Week and Year

This chart shows that while the most dramatic decreases in KA crashes have occurred on Friday, Saturday, and Sunday, those also remain the peak times for KA crashes. In 1996 and 1997, Friday and Saturday had more KA crashes than any other days of the week, indicating these are good targets for programming. On the other hand, we cannot overlook the fact that over 60% of crashes occurred during the Sunday through Thursday period, with crashes generally declining from Sunday through Tuesday, and picking up again through Thursday.

### Fatal and Serious Injury Crashes by Day of Week and Year



### Fatal and Serious Injury Crashes by Light Condition and Year



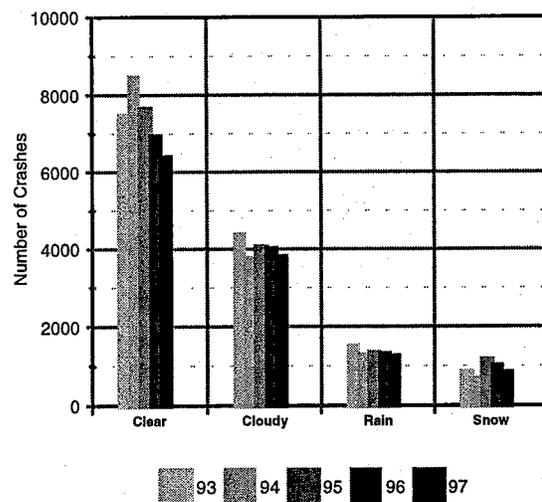
### Number by Light Condition and Year

As is obvious in the two charts immediately above, the majority of KA crashes occur during daylight and on clear days. There is little difference in the patterns of the data between the categories when examining the period 1993-1997. This would suggest that OHSP programming has affected crashes within each of the light conditions to about the same extent. Program components may note that while nighttime creates a whole new set of challenges to the driver that contributes to a crash, most serious and fatal crashes occur during the day may increase caution among daylight drivers.

### Number by Precipitation and Year

Similar to light conditions, most KA crashes occur on clear or cloudy days, with only about 2000 crashes occurring each year in rain or snow. Clear weather crashes appear to have decreased the most from 1993 to 1997, while crash counts in the other weather categories remained relatively flat. While this would indicate that there is an opportunity to create change, especially in rainy or snowy conditions. However, these crashes make up only about 20% of all crashes in the state. That means it would take a lot of change among these categories to have a significant impact on the overall state numbers.

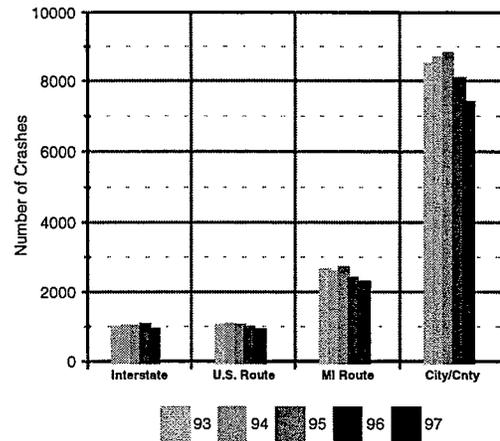
### Fatal and Serious Injury Crashes by Precipitation and Year



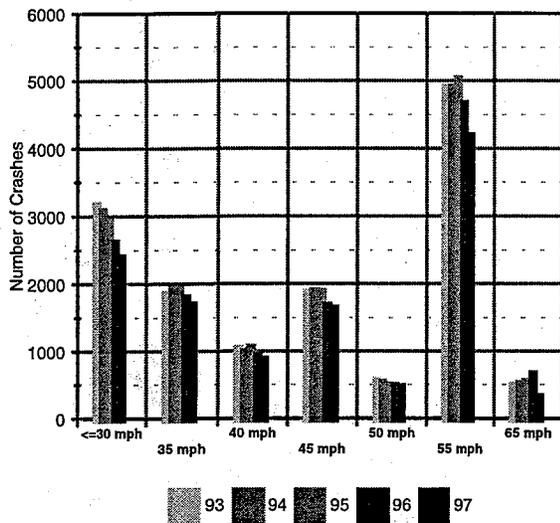
### Number by Highway Class and Year

Once again, it is clear that the vast majority of KA crashes occur on city/county roads. These also appear to be the roads that are experiencing the most significant decrease in crashes. It is rational to continue to focus efforts on reducing the KA crash count on these city/county roads.

Fatal and Serious Injury Crashes by Highway Class and Year



Fatal and Serious Injury Crashes by Speed Limit and Year



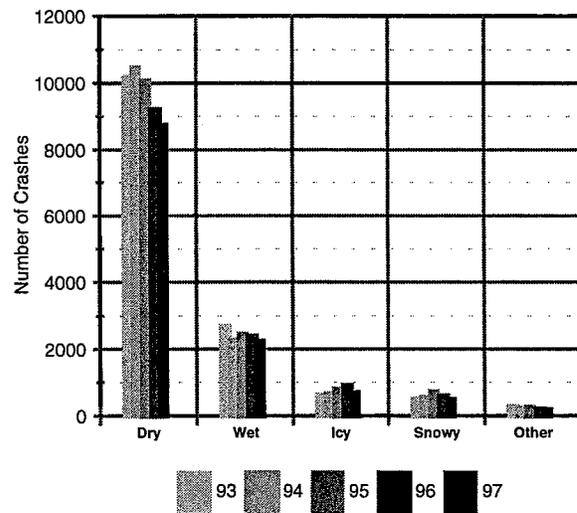
### Number by Speed Limit and Year

The number of KA crashes declined for all speed limit categories in 1997. This was the first year of decline after 4 years of increases on 65 mph roads.

### Number by Road Surface Condition and Year

As was the case for precipitation, most KA crashes occur on dry roads, and it is on these dry roads that we see the largest change in crash frequency. Little change is evident in KA crash counts on slick road surfaces. Because there are relatively few KA crashes on slick roads, it would take a lot of change among these categories to have a significant impact on the overall state numbers.

Fatal and Serious Injury Crashes by Road Surface Condition and Year



Number by Hazardous Action and Year (Single-Vehicle)

Number of Vehicles Involved in Single-Vehicle Crashes by Hazardous Action and Year															
	None	Speed Too Fast	Speed Too Slow	Fail to Yield	Traffic Control	Wrong Way	Left of Center	Improper Passing	Improper Lane Use	Improper Turn	Improper Signal	Improper Backing	Clear Dist	Other	Unknown
1993	507	1894	11	10	39	11	108	19	58	9	1	2	182	1227	218
1994	492	1799	17	7	42	8	98	14	57	9	4	4	196	1177	208
1995	494	1889	12	20	41	4	74	9	47	6	3	5	168	1190	254
1996	476	1749	10	23	44	3	78	14	40	4	2	3	168	1174	215
1997	446	1627	10	15	32	2	59	21	33	6	1	0	155	1047	218
1993	0.4%	35.7%	18.2%	80.0%	38.5%	36.4%	25.9%	42.1%	43.1%	11.1%	100.0%	50.0%	32.4%	34.9%	2.8%
1994	0.8%	37.6%	17.7%	28.6%	28.6%	12.5%	27.6%	64.3%	43.9%	11.1%	25.0%	50.0%	27.0%	35.9%	6.7%
1995	1.4%	34.8%	50.0%	45.0%	26.8%	0.0%	27.0%	33.3%	48.9%	16.7%	33.3%	20.0%	30.4%	35.2%	5.1%
1996	0.8%	34.2%	30.0%	39.1%	27.3%	33.3%	26.9%	42.9%	30.0%	0.0%	0.0%	0.0%	33.9%	36.1%	5.6%
1997	1.1%	34.2%	10.0%	46.7%	43.8%	50.0%	28.8%	38.1%	27.3%	16.7%	0.0%	30.3%	31.7%	5.1%	11.0%
Number of Vehicles															
Proportion of Hazardous Actions Cited															

The table above shows that, according to the officer completing the crash report, most single-vehicle crashes are the result of excessive speed. However, in only about 34% of these crashes is the driver cited for the hazardous action that precipitated the crash. While it is well understood that in fatal and severe-injury crashes there are often ethical and legal constraints to issuing a citation, increasing the proportion of KA crashes (especially speed-related crashes) in which persons are cited would likely act to impress on persons that safe, legal driving is important and will be strictly enforced.

Number by Hazardous Action and Year (Multiple-Vehicle)

Number of Vehicles Involved in Multiple-Vehicle Crashes by Hazardous Action and Year															
	None	Speed Too Fast	Speed Too Slow	Fail to Yield	Traffic Control	Wrong Way	Left of Center	Improper Passing	Improper Lane Use	Improper Turn	Improper Signal	Improper Backing	Clear Dist.	Other	Unknown
1993	10555	918	46	3062	1515	67	610	139	271	337	28	55	1656	1386	403
1994	10962	923	27	3182	1413	79	575	133	251	270	22	57	1736	1403	467
1995	11266	1018	51	3114	1401	72	609	129	236	289	21	45	1704	1476	523
1996	10371	939	48	2996	1350	62	493	144	250	250	17	36	1504	1344	589
1997	9784	882	30	2875	1267	55	465	105	211	221	14	29	1418	1228	490
1993	0.3%	36.4%	37.0%	55.7%	54.8%	22.4%	36.9%	46.0%	37.3%	46.3%	14.3%	40.0%	50.7%	27.8%	2.5%
1994	0.2%	38.2%	33.3%	55.3%	54.8%	38.0%	36.9%	48.9%	38.7%	48.9%	22.7%	21.1%	50.9%	28.8%	1.7%
1995	0.5%	37.6%	37.3%	55.2%	53.9%	27.8%	37.1%	51.2%	39.8%	43.3%	23.8%	37.8%	53.7%	27.4%	1.3%
1996	0.4%	38.6%	41.7%	52.3%	52.4%	19.4%	39.8%	43.8%	38.8%	34.8%	35.3%	27.8%	51.2%	27.2%	2.0%
1997	0.3%	40.0%	33.3%	53.3%	49.2%	30.9%	36.6%	39.1%	41.2%	42.5%	35.7%	44.8%	52.2%	25.2%	2.2%
Number of Vehicles															
Proportion of Hazardous Actions Cited															

In contrast to single-vehicle crashes in which the most common hazardous action was excessive speed, among multiple-vehicle crashes the most common hazardous action reported by police was "none." Readers should note, however, that these crashes involve multiple vehicles and thus some of the vehicles were innocent bystanders. Among the hazardous actions listed, "failure to yield" had the most cases by nearly 2 to 1 over the next leading action. Note that, like the single-vehicle crashes, hazardous actions in multiple-vehicle crashes are cited by police generally less than half the time they are noted on the crash report form.

**Number by Vehicle Type and Year**

<b>Number of Vehicles Involved in KA Injury Crashes by Vehicle Type</b>			
<i>Vehicle Type</i>	<i>Year</i>	<i>Count</i>	<i>Rate per 1000 Vehicles</i>
<i>Car</i>	93	17640	3.29
	94	17613	3.23
	95	17732	3.21
	96	16462	2.92
	97	15001	2.63
<i>Heavy Truck</i>	93	798	7.39
	94	935	8.53
	95	885	8.07
	96	924	8.22
	97	811	7.12
<i>Light Truck</i>	93	247	4.02
	94	324	5.26
	95	333	5.45
	96	320	5.28
	97	319	5.32
<i>Motorcycle</i>	93	830	7.35
	94	804	6.86
	95	725	6.09
	96	657	5.44
	97	665	5.26
<i>Pickup</i>	93	3034	2.86
	94	3348	3.02
	95	3438	2.97
	96	3159	2.61
	97	3095	2.46
<i>Van</i>	93	1438	9.57
	94	1555	10.18
	95	1799	11.62
	96	1684	10.73
	97	1573	9.89

By far the largest vehicle group in this table is passenger cars (almost 10,000 KA crashes more than all other vehicle types combined). For this reason, crashes involving passenger cars should be the central focus of OHSP program efforts. Efforts targeting other vehicle types may well result in declines in KA crashes involving those vehicle types, but would not, in all probability, move the state markedly toward the OHSP goals, even if the declines were dramatic.

## KA Crashes -- Drivers Age 14-18

Number and Rate by Year

<b>Number and Rate of Fatal and Serious Injury Crashes Drivers age 14-18</b>		
<i>Year</i>	<i>Number of Crashes</i>	<i>Rate per 1000 Licensed Drivers</i>
93	2601	8.98
94	2792	9.48
95	2735	9.00
96	2513	8.27
97	2390	6.79

As can be seen in the table above, both the number of crashes and the rate per 1000 licensed drivers has decreased considerably for this group of drivers since 1994. However, the 1997 rate of 6.79 KA crashes per 1000 licensed drivers is quite a bit higher than the rate of 5.3 per 1000 licensed drivers for males age 16-20 years. Clearly this remains an important, if small, target group.

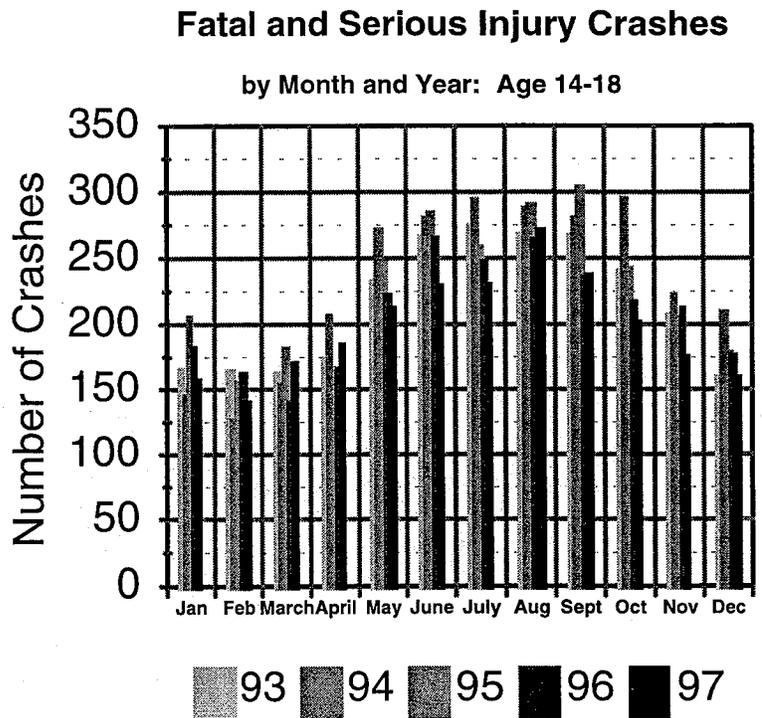
Number and Rate by Age, Sex, and Year

Fatal and Serious Injury Crash Frequency and Rate by Year, Age and Sex Drivers Age 14-18				
Driver Age	Sex	Year	Count	Rate per 1000 Licensed Drivers
14	M	93	156	83.69
		94	153	87.13
		95	150	97.91
		96	124	80.94
		97	116	5.49
	F	93	67	232.64
		94	85	290.10
		95	71	282.87
		96	68	270.92
		97	67	3.21
16	M	93	415	10.00
		94	466	11.34
		95	459	10.68
		96	408	9.49
		97	404	9.12
	F	93	342	8.77
		94	374	9.40
		95	347	8.31
		96	344	8.24
		97	309	7.31
17	M	93	483	9.50
		94	499	9.43
		95	481	9.13
		96	447	8.48
		97	436	7.92
	F	93	303	6.33
		94	331	6.60
		95	304	5.96
		96	301	5.90
		97	274	5.18
18	M	93	492	8.80
		94	543	9.68
		95	532	9.08
		96	475	8.11
		97	443	7.49
	F	93	304	5.81
		94	283	5.40
		95	328	5.96
		96	302	5.49
		97	297	5.28

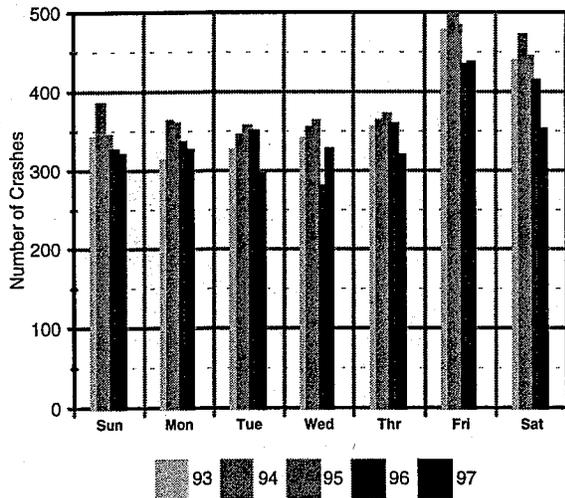
This table shows that among this age group, males have a higher crash rate than females, and that the crash rates generally decline with age (and presumably driving experience). While these data are interesting, at this point in time it is difficult to suggest programs for OHSP based on these data because Michigan has only recently begun a graduated driver's licensing system. We have little data to date on the effects of this new licensing system because it is so recent. However, these baseline data provide a good starting point to gauge possible effects of the new system.

**Number by Month and Year**

This chart shows that among the 14-18 year old driver age group, August is generally the month with the largest number of KA crashes. August also appears to be a likely candidate for reaching this age group because of all the summer months (each with high numbers of crashes), August is the month that has experienced the smallest amount of change since 1993.



**Fatal and Serious Injury Crashes**  
by Day of Week and Year: Age 14-18



**Number by Day of Week and Year**

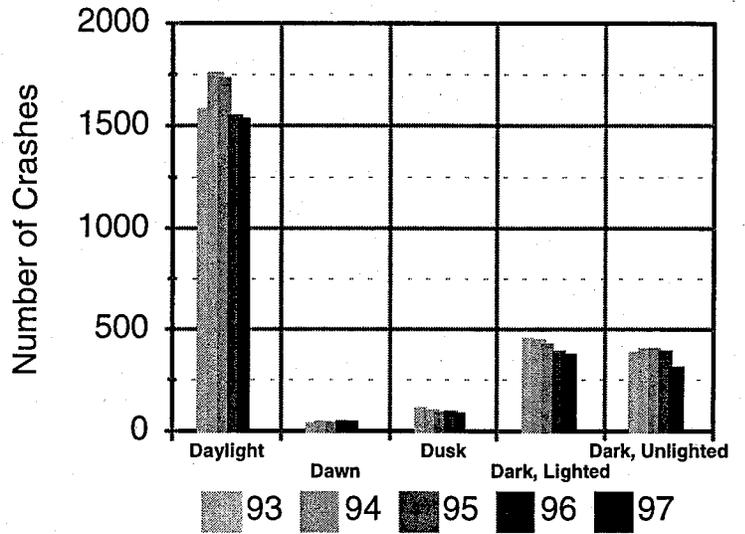
This chart shows that Friday and Saturday have typically been the most problematic days for this age group of drivers. However, while the number of KA crashes that occur on Saturday declined in 1996 and 1997, the number of KA crashes remained relatively stable for Friday, indicating that this may be a day to have special programs targeting this age group.

### Number by Light Condition and Year

Most crashes among this age group occur in daylight. Declines from 1995 levels were seen in each category except crashes at dawn

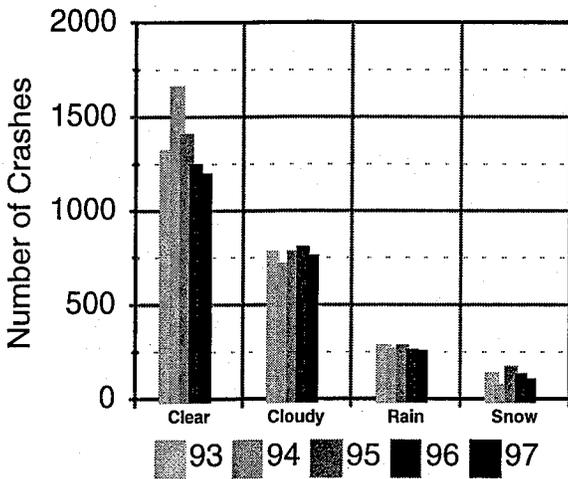
### Fatal and Serious Injury Crashes

by Light Condition & Year: Age 14-18



### Fatal and Serious Injury Crashes

by Precipitation and Year: Age 14-18



### Number by Precipitation and Year

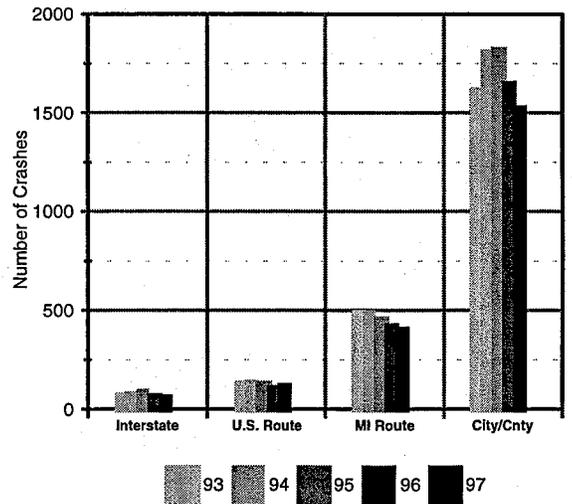
Most KA crashes among this age group occurred on clear or cloudy days. Among the weather conditions noted by police, the only declines for this age group were seen in clear and snow conditions. Perhaps there would be value in focusing additional attention in programs involving this age group on the challenges of driving in cloudy and rainy conditions.

### Number by Highway Class and Year

This chart shows that the vast majority of KA crashes among this age group occur on city/county roads, followed distantly by Michigan routes. It seems clear that messages and programs involving this age group should focus on the behavior of these drivers on local roads that are often perceived to be safer than highways.

### Fatal and Serious Injury Crashes

by Highway Class and Year: Age 14-18

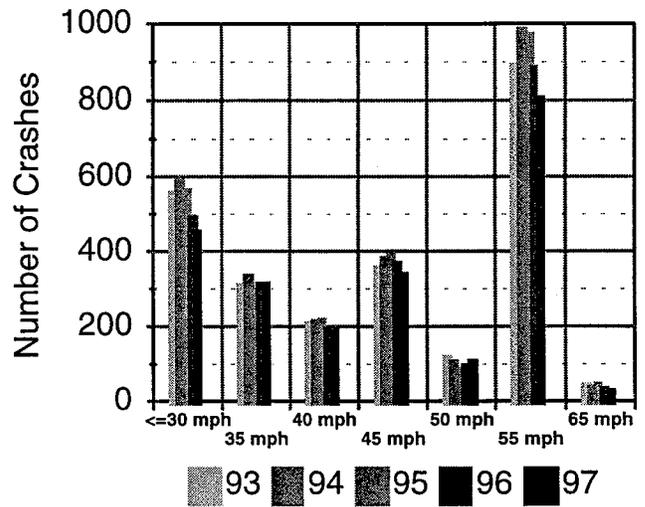


### Number by Speed Limit and Year

It is interesting that among this age group of drivers there are two distinct modes to the data on this item. The highest number of KA crashes consistently occur on 55 mph roads, followed by roads signed at 30 mph or less. This validates much of what we saw in the previous chart. That is, among drivers of this age group, the most hazardous roads are local/rural highways and city streets.

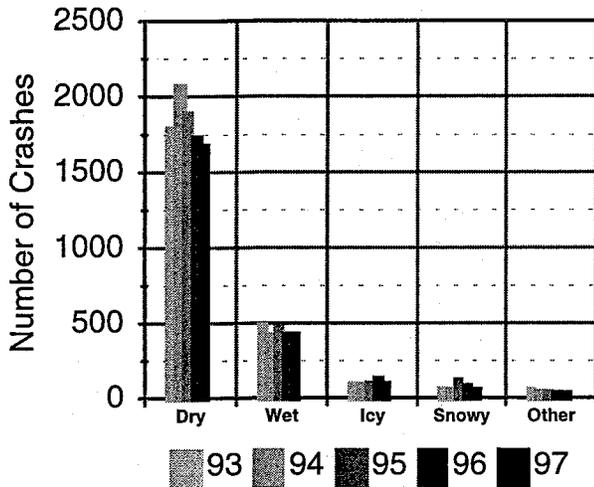
### Fatal and Serious Injury Crashes

by Speed Limit and Year: Age 14-18



### Fatal and Serious Injury Crashes

by Road Condition & Year: Age 14-18



### Number by Road Surface Condition and Year

As expected, most KA crashes among this age group are on dry roads. While there may well be value in considering programs targeting drivers of this age group to impress upon them the dangers associated with driving on slippery roads (as indicated by relatively flat levels across years), the effect of even a highly successful program on the overall OHSP traffic safety goal would be negligible.

Number by Hazardous Action and Year (Single-Vehicle)

Number of Vehicles Involved in Single-Vehicle Crashes by Hazardous Action and Year Drivers Age 14-18															
	None	Speed Too Fast	Speed Too Slow	Fail to Yield	Traffic Control	Wrong Way	Left of Center	Improper Passing	Improper Lane Use	Improper Turn	Improper Signal	Improper Backing	Clear Dist	Other	Unk.
Number of Vehicles	1993	62	355	2	1	4	1	7	2	8	0	0	21	148	26
	1994	54	372	5	1	3	0	16	5	12	2	0	30	171	17
	1995	52	364	2	2	3	0	6	4	5	0	1	22	175	23
	1996	49	315	2	2	9	0	8	5	1	0	1	27	175	21
	1997	41	307	3	1	4	0	11	5	1	0	0	14	138	22
Proportion of Hazardous Actions Cited	1993	0.0%	41.4%	0.0%	0.0%	50.0%	100.0%	0.0%	50.0%	37.5%	NA	NA	38.1%	39.9%	3.9%
	1994	0.0%	44.1%	40.0%	0.0%	33.3%	NA	12.5%	80.0%	58.3%	50.0%	NA	33.3%	49.7%	11.8%
	1995	1.9%	44.2%	100.0%	100.0%	33.3%	NA	33.3%	25.0%	80.0%	NA	NA	40.9%	42.3%	4.4%
	1996	0.0%	46.7%	0.0%	100.0%	44.4%	NA	50.0%	40.0%	0.0%	NA	0.0%	55.6%	39.4%	9.5%
	1997	0.0%	36.5%	33.3%	0.0%	25.0%	NA	63.6%	60.0%	100.0%	NA	NA	28.6%	36.2%	0.0%

Once again we see that the most common hazardous action noted by police for single-vehicle crashes is excessive speed. And once again we see that less than half of offenders receive a citation for the hazardous acts that precipitated the crash (according to the police officer).

Number by Hazardous Action and Year (Multiple-Vehicle)

Number of Vehicles Involved in Multiple-Vehicle Crashes by Hazardous Action and Year Drivers Age 14-18															
	None	Speed Too Fast	Speed Too Slow	Fail to Yield	Traffic Control	Wrong Way	Left of Center	Improper Passing	Improper Lane Use	Improper Turn	Improper Signal	Improper Backing	Clear Dist	Other	Unkn
1993	703	129	5	453	199	5	56	18	24	44	6	5	191	143	34
1994	744	142	5	502	203	9	66	23	30	31	5	7	211	147	36
1995	739	157	8	485	192	6	75	14	15	32	1	4	219	183	33
1996	693	145	7	479	163	8	67	22	25	27	2	2	158	151	47
1997	692	131	2	450	184	7	69	12	24	27	1	2	190	125	34
1993	0.1%	51.9%	60.0%	60.5%	68.8%	60.0%	48.2%	44.4%	41.7%	52.3%	16.7%	60.0%	67.0%	32.2%	5.9%
1994	0.1%	47.9%	80.0%	61.8%	64.5%	22.2%	43.9%	69.6%	56.7%	61.3%	20.0%	14.3%	61.6%	26.5%	5.6%
1995	0.8%	41.4%	37.5%	63.5%	67.7%	0.0%	53.3%	78.6%	53.3%	50.0%	0.0%	50.0%	63.0%	30.6%	3.0%
1996	0.7%	49.7%	57.1%	57.0%	65.6%	12.5%	52.2%	54.6%	36.0%	48.2%	0.0%	100.0%	63.9%	35.1%	2.1%
1997	0.4%	44.3%	0.0%	58.7%	59.2%	14.3%	42.0%	33.3%	37.5%	48.2%	0.0%	50.0%	64.2%	31.2%	0.0%
Number of Vehicles															
Proportion of Hazardous Actions Cited															

In contrast to single-vehicle crashes in which the most common hazardous action was excessive speed, among multiple-vehicle crashes the most common hazardous action reported by police was "none." However, compared to all drivers taken as a whole, far fewer drivers age 14-18 were reported as having engaged in no hazardous action. Among the hazardous actions listed, "failure to yield" had the most cases by over 2 to 1 over the next leading action. Note that, like the single-vehicle crashes, hazardous actions in multiple-vehicle crashes are cited by police generally less than half the time they are noted on the crash report form.

Number by Vehicle Type and Year

**Number of Vehicles Involved in KA Injury Crashes by Vehicle Type Drivers Age 14-18**

<i>Vehicle Type</i>	<i>Year</i>	<i>Count</i>
<i>Car</i>	93	2046
	94	2191
	95	2164
	96	1945
	97	1841
<i>Heavy Truck</i>	93	4
	94	5
	95	1
	96	2
	97	4
<i>Light Truck</i>	93	21
	94	21
	95	19
	96	23
	97	23
<i>Motorcycle</i>	93	64
	94	62
	95	49
	96	44
	97	43
<i>Pickup</i>	93	253
	94	306
	95	305
	96	309
	97	297
<i>Van</i>	93	67
	94	78
	95	78
	96	86
	97	94

Passenger cars are the vehicle of choice among this age group. Pickup trucks also make up a notable proportion of the vehicles involved in KA crashes for this age group.

**KA Crashes -- Drivers Age 70+**  
**Number and Rate by Year**

<b>Number and Rate of Fatal and Serious Injury Crashes Drivers age 70+</b>		
<i>Year</i>	<i>Number of Crashes</i>	<i>Rate per 1000 Licensed Drivers</i>
93	1,261	2.16
94	1,290	2.13
95	1,348	2.14
96	1,333	2.11
97	1,234	1.89

This table shows that the number of KA crashes and rate per 1000 licensed drivers among drivers age 70 and older has decreased since 1995. Although KA crashes among this age group make up only 10% of all KA crashes, it is interesting to note that the 1997 rate of 1.89 per 1000 licensed drivers is nearly identical to the overall rate of 1.88 shown in an earlier table. At this point it should be noted that because this age group only makes up 10% of all KA crash cases, it is not a promising target group for achieving the overall traffic safety goals set by OHSP. Indeed, a 40% decrease in KA crashes involving this age group (a seemingly unreachable goal barring some major, unforeseen policy change) probably would only result in only a 4% decrease in the overall rates established by OHSP as goals. However, it is equally important to note that this is a fast growing segment of the population and should be monitored closely to assess whether crash profiles for this group change as it expands in the future.

Number and Rate by Age, Sex, and Year

Fatal and Serious Injury Crash Frequency and Rate by Year, Age and Sex Drivers Age 70+				
Driver Age	Sex	Year	Count	Rate per 1000 Licensed Drivers
70-74	F	93	193	1.39
		94	226	1.59
		95	203	1.40
		96	185	1.28
		97	181	1.25
	M	93	280	2.23
		94	256	1.97
		95	306	2.31
		96	303	2.28
		97	258	1.93
75-79	F	93	179	1.85
		94	165	1.66
		95	166	1.61
		96	181	1.75
		97	161	1.47
	M	93	213	2.54
		94	228	2.66
		95	246	2.76
		96	219	2.46
		97	215	2.29
80-84	F	93	95	1.86
		94	109	2.00
		95	92	1.57
		96	118	2.01
		97	107	1.70
	M	93	144	3.28
		94	155	3.31
		95	164	3.30
		96	168	3.38
		97	138	2.65

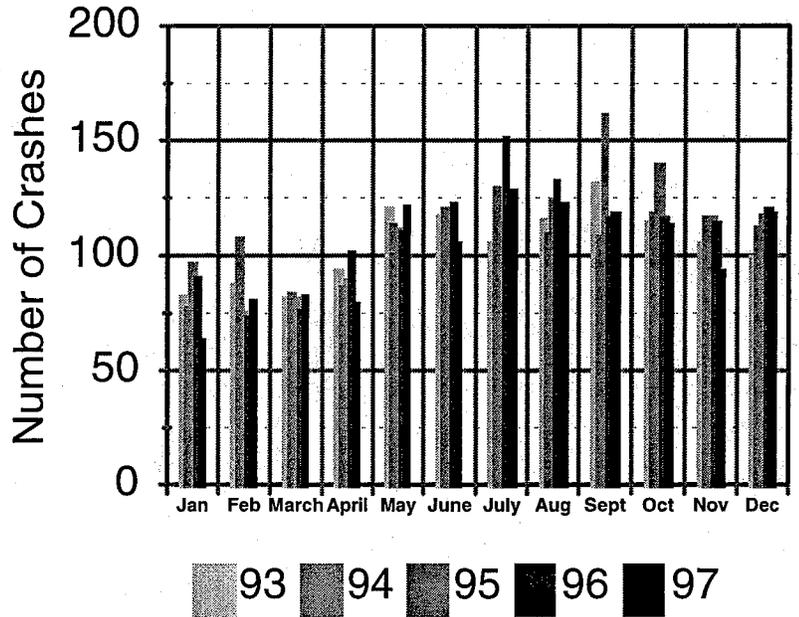
As was stated earlier, the number of cases reported for each age group within the larger age 70 and over group do not warrant special attention if one wants to achieve the overall OHSP target goals because of the small numbers of cases involved. However, it will become increasingly important to track these numbers as the population of older Michigan drivers increases to determine if at some point in the future if specific remedial or prophylactic programming will be needed to address emerging problems.

<i>Driver Age</i>	<i>Sex</i>	<i>Year</i>	<i>Count</i>	<i>Rate per 1000 Licensed Drivers</i>
85-89	F	93	37	2.01
		94	41	2.03
		95	50	2.22
		96	31	1.37
		97	49	1.98
	M	93	77	4.55
		94	69	3.88
		95	70	3.63
		96	60	3.11
		97	72	3.50
90-94	F	93	3	0.95
		94	8	2.13
		95	7	1.53
		96	7	1.53
		97	10	1.88
	M	93	21	5.39
		94	13	3.06
		95	20	4.09
		96	20	4.09
		97	14	2.77
95+	F	93	0	0.00
		94	0	0.00
		95	0	0.00
		96	1	2.53
		97	2	4.51
	M	93	0	0.00
		94	0	0.00
		95	2	3.57
		96	4	7.14
		97	2	3.16

### Number by Month and Year

Contrary to findings from all ages and the age 14-18 driver group, KA crashes involving drivers age 70 and over are not highly concentrated in the summer months. In fact, the months from May through December have about the same crash experience with the months of January through April experiencing slightly fewer KA crashes.

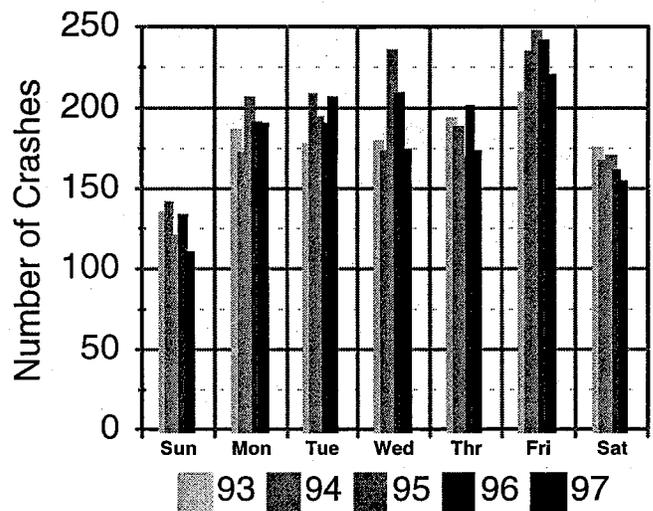
### Fatal and Serious Injury Crashes by Month and Year: Age 70+



### Number by Day of Week and Year

Drivers age 70 and over also have a unique distribution of KA crashes when examined by day of the week. Among drivers of this age group, Saturday and Sunday actually represent low points in the weekly count of KA crashes. Much like drivers of other ages, however, KA crashes among drivers age 70 and over are at their highest on Fridays.

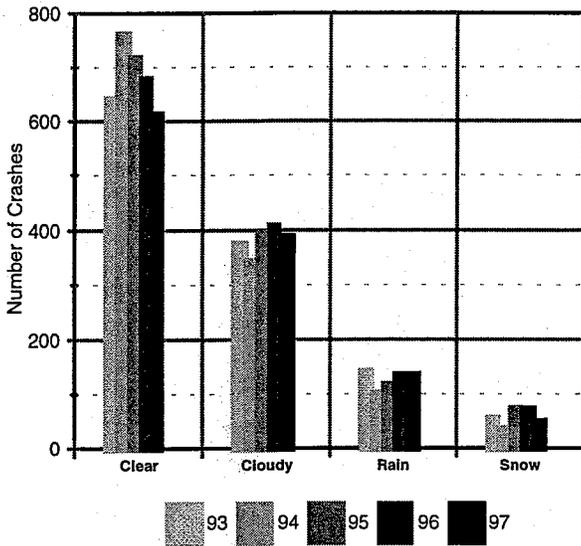
### Fatal and Serious Injury Crashes by Day of Week and Year: Age 70+



### Number by Light Condition and Year

This chart shows the extent to which drivers age 70 and over restrict their driving to daylight hours. Compared to the other age groups, drivers age 70 and over have very, very few crashes at times other than full daylight. This is probably due in large part to the increased difficulty we all have with seeing clearly in the dark as we age.

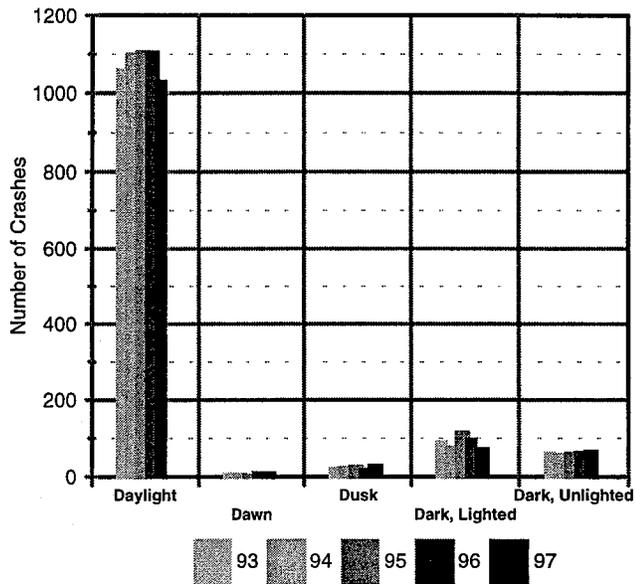
**Fatal and Serious Injury Crashes by Precipitation and Year: Age 70+**



### Number by Highway Class and Year

Most KA crashes involving drivers age 70 and over occur city/county roads and Michigan routes, much like the younger drivers age 14-18 years.

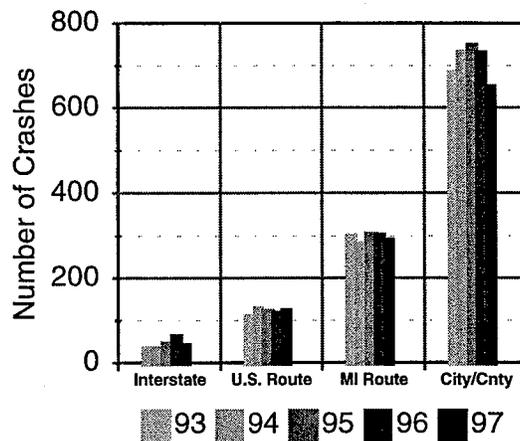
**Fatal and Serious Injury Crashes by Light Condition & Year: Age 70+**



### Number by Precipitation and Year

Most KA crashes involving drivers age 70 and over occur on clear or cloudy days, just like their other aged cohorts.

**Fatal and Serious Injury Crashes by Highway Class and Year: Age 70+**

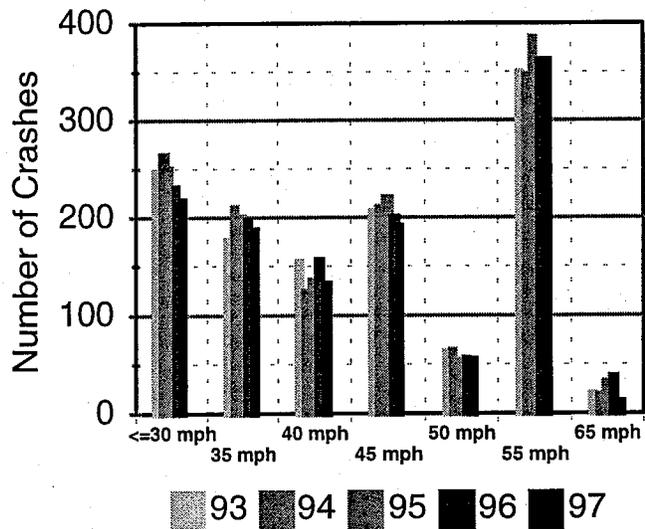


### Number by Speed Limit and Year

Also like the drivers age 14-18, drivers age 70 and over have a large number of KA crashes on roads signed at 55 mph and 30 mph and below. This is probably due in large part to their staying on city/county roads and Michigan routes.

### Fatal and Serious Injury Crashes

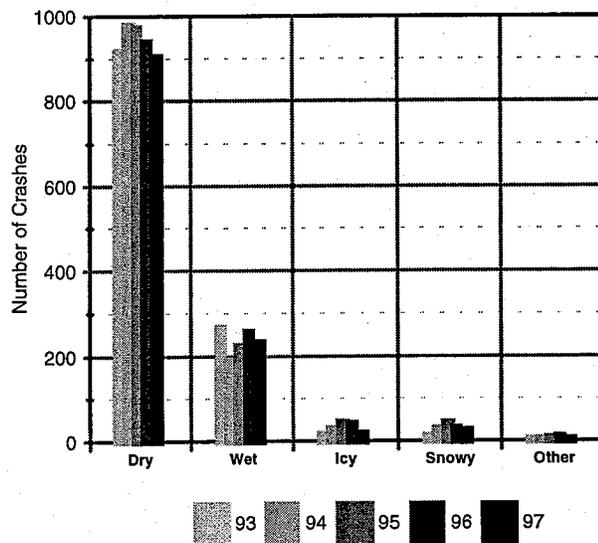
by Speed Limit and Year: Age 70+



### Number by Road Condition and Year

The pattern of KA crashes among drivers age 70 and over is quite similar to that of younger drivers. Again we can see declines in KA crashes on dry pavement from 1994 levels, but the number of crashes on wet pavement does not show a similar pattern, indicating a potential target for intervention (although the number of KA crashes involving older drivers on wet pavement is quite small relative to the statewide crash picture).

### Fatal and Serious Injury Crashes by Road Condition & Year: Age 70+



Number by Hazardous Action and Year (Single-Vehicle)

Number of Vehicles Involved in Single-Vehicle Crashes by Hazardous Action and Year Drivers Age 70+												
	None	Speed Too Fast	Speed Too Slow	Fail to Yield	Traffic Control	Left of Center	Improper Lane Use	Improper Turn	Improper Backing	Clear Dist	Other	Unkn.
Number of Vehicles	1993	21	25	0	1	0	6	2	1	7	44	9
	1994	24	25	1	0	8	4	0	0	7	38	12
	1995	22	29	0	1	0	6	1	1	13	46	16
	1996	21	38	0	0	2	4	3	0	8	43	11
	1997	19	34	0	1	3	4	3	0	5	44	9
Proportion of Hazardous Actions Cited	1993	0.0%	12.0%	NA	100.0%	NA	16.7%	0.0%	0.0%	14.3%	9.1%	0.0%
	1994	0.0%	20.0%	0.0%	NA	NA	12.5%	0.0%	NA	14.3%	10.5%	0.0%
	1995	0.0%	17.2%	NA	0.0%	NA	50.0%	0.0%	0.0%	7.7%	19.6%	0.0%
	1996	0.0%	26.3%	NA	NA	0.0%	25.0%	0.0%	NA	0.0%	20.9%	9.1%
	1997	0.0%	32.4%	NA	100.0%	33.3%	25.0%	0.0%	NA	20.0%	13.6%	0.0%

Unlike the other driver age groups, hazardous actions for drivers age 70 and over involved in single-vehicle crashes are not dominated by excessive speed. Indeed, nonspecific hazardous actions (i.e., other, none, unknown) make up the majority of hazardous actions noted for this age group in single-vehicle crashes.

Number by Hazardous Action and Year (Multiple-Vehicle)

Number of Vehicles Involved in Multiple-Vehicle Crashes by Hazardous Action and Year Drivers Age 70+															
	None	Speed Too Fast	Speed Too Slow	Fail to Yield	Traffic Control	Wrong Way	Left of Center	Improper Passing	Improper Lane Use	Improper Turn	Improper Signal	Improper Backing	Clear Dist	Other	Unkn.
1993	406	21	4	349	92	8	32	5	13	44	3	1	86	42	27
1994	379	15	2	386	109	4	31	3	16	32	2	3	87	72	24
1995	446	20	5	390	102	7	29	3	13	34	3	5	93	45	22
1996	440	26	5	346	101	4	29	5	26	31	1	2	79	75	29
1997	396	19	4	367	91	6	29	1	13	23	1	3	93	65	24
1993	0.3%	19.1%	25.0%	59.9%	54.4%	25.0%	34.4%	40.0%	53.9%	50.0%	0.0%	100.0%	50.0%	14.3%	7.4%
1994	0.3%	40.0%	0.0%	52.3%	58.7%	75.0%	29.0%	0.0%	50.0%	56.3%	50.0%	33.3%	48.3%	19.4%	4.2%
1995	0.7%	45.0%	20.0%	53.6%	50.0%	14.3%	34.5%	0.0%	38.5%	55.9%	33.3%	20.0%	44.1%	24.4%	0.0%
1996	0.5%	30.8%	0.0%	48.0%	58.4%	0.0%	55.2%	40.0%	42.3%	51.6%	100.0%	50.0%	44.3%	26.7%	0.0%
1997	0.0%	26.3%	75.0%	49.1%	53.9%	33.3%	31.0%	100.0%	69.2%	39.1%	0.0%	66.7%	46.2%	23.1%	0.0%

The patterns of hazardous actions reported for drivers age 70 and over are quite similar to those of the other age groups, and are predominated by actions that tend to violate the driving space of another vehicle (e.g., failure to yield, left of center) rather than speed.

Number by Vehicle Type and Year

**Number of Vehicles Involved in KA Injury Crashes by Vehicle Type Drivers Age 70+**

Vehicle Type	Year	Count
Car	93	1075
	94	1082
	95	1124
	96	1130
	97	1026
Heavy Truck	93	3
	94	1
	95	5
	96	2
	97	6
Light Truck	93	5
	94	7
	95	12
	96	4
	97	7
Motorcycle	93	1
	94	2
	95	5
	96	0
	97	4
Pickup	93	78
	94	104
	95	103
	96	97
	97	85
Van	93	45
	94	50
	95	54
	96	53
	97	67

The vast majority of KA crashes involving drivers age 70 and over involve the use of passenger vehicles. The next largest vehicle type group for this age is pickup trucks. However, it would appear that the number of KA crashes involving vans is increasing steadily (if slowly), and should continue to be monitored.

## KA Injured Occupants -- All Drivers

Number and Rate by Year

Number and Rate of Occupants with Fatal or Serious Injuries by Occupant Position and Year			
Occupant Position	Year	Number of KA Injured Occupants	Rate per 1000 Population
Driver	93	11,659	1.234
	94	11,489	1.210
	95	11,723	1.228
	96	10,988	1.149
	97	10,028	1.047
Front Center	93	211	0.022
	94	212	0.022
	95	183	0.019
	96	152	0.016
	97	159	0.017
Front Right	93	3,289	0.348
	94	3,459	0.364
	95	3,423	0.359
	96	3,154	0.330
	97	2,937	0.307
Rear Center	93	205	0.022
	94	204	0.022
	95	199	0.021
	96	171	0.018
	97	195	0.020
Rear Left	93	492	0.052
	94	489	0.052
	95	457	0.048
	96	419	0.044
	97	386	0.040
Rear Right	93	488	0.052
	94	574	0.061
	95	536	0.056
	96	474	0.050
	97	425	0.044

In order for OHSP to achieve its traffic safety goals, the focus should clearly be on drivers and front-right passengers. This is because these are the only two groups of sufficient size to have an impact on the statewide goals.

When this table is examined, we can also see that each of these measures shows a general decline from 1994 or 1995 levels, showing that not only did the number of KA crashes tend to decline from 1994-95, but the number of persons who experienced KA injuries also declined during the same period.

**Number and Rate by Year (Pedestrians and Bicyclists)**

<b>Number and Rate of Fatal or Serious Injuries Among Pedestrians and Bicyclists</b>			
	<i>Year</i>	<i>Number of KA Injuries</i>	<i>Rate per 100K Population</i>
Bike	93	419	4.435
	94	467	4.920
	95	427	4.472
	96	397	4.151
	97	389	4.062
Pedestrian	93	1141	12.077
	94	1210	12.748
	95	1271	13.310
	96	1189	12.432
	97	1073	11.205

One can see in the adjacent table that pedestrian crashes are a much more serious threat to OHSP reaching its traffic safety goals than are bicycle crashes. However, neither of these categories of crashes is sufficiently pervasive that even a dramatic change in the frequency of these crashes would make much of a dent in OHSP achieving its statewide goals. On the other hand, these data do show declining numbers of KA injuries since 1995.

The following sets of tables show the number of occupants the experienced fatal or serious (A-level) injury by the occupant's age, sex, and whether the injured person was a vehicle occupant, a pedestrian, or a bicyclist. These tables include all KA crashes, regardless of the age of the drivers involved in the crash. Based on the data in the following tables, OHSP would do well toward achieving its statewide traffic safety goals if the focus of programming efforts were on drivers age 21-34. This group, spanning 14-years of ages, had the highest number of KA injuries. Indeed, the next highest group (drivers age 35-54), spanned 20 years of ages (six fewer than the highest group), yet still experienced fewer KA crash injuries.

Number by Age, Sex, and Year

Number of Occupants with Fatal or Serious Injuries by Age, Gender and Occupant Type					
Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
0 yr	F	93	16	2	0
		94	5	1	0
		95	11	3	0
		96	20	1	0
		97	12	0	0
	M	93	21	1	0
		94	22	1	0
		95	18	1	0
		96	16	1	0
		97	15	0	0
1 yr	F	93	10	3	0
		94	16	7	0
		95	11	4	0
		96	15	4	0
		97	6	3	0
	M	93	14	0	0
		94	20	3	0
		95	18	3	0
		96	24	2	0
		97	6	2	0
2 yr	F	93	17	3	0
		94	22	6	0
		95	23	4	0
		96	23	8	0
		97	10	3	0
	M	93	30	4	0
		94	24	6	0
		95	32	12	0
		96	22	6	0
		97	17	6	0

Number of Occupants with Fatal or Serious Injuries by Age, Gender and Occupant Type					
Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
3 yr	F	93	26	6	1
		94	25	5	0
		95	30	9	0
		96	24	9	0
		97	19	1	0
	M	93	45	10	0
		94	30	9	2
		95	42	11	1
		96	39	8	0
		97	27	7	0
4 yr	F	93	29	4	2
		94	36	7	1
		95	33	4	1
		96	36	9	1
		97	19	5	0
	M	93	26	10	2
		94	35	10	1
		95	24	13	2
		96	33	12	6
		97	22	13	2
5-9 yr	F	93	138	48	18
		94	118	46	15
		95	148	51	23
		96	134	45	9
		97	105	37	16
	M	93	173	73	45
		94	170	79	66
		95	173	82	45
		96	131	98	42
		97	120	77	52

Number of Occupants with Fatal or Serious Injuries by Age, Gender and Occupant Type					
Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
10-15yr	F	93	415	73	41
		94	442	71	43
		95	421	86	33
		96	346	66	35
		97	308	66	22
	M	93	389	93	98
		94	411	104	125
		95	387	93	112
		96	343	86	115
		97	255	94	95
16-20yr	F	93	1403	44	10
		94	1431	36	7
		95	1401	27	15
		96	1368	41	5
		97	1167	37	6
	M	93	1644	53	28
		94	1725	71	33
		95	1621	62	36
		96	1564	57	22
		97	1305	71	38
21-34yr	F	93	2302	74	15
		94	2298	68	15
		95	2346	82	9
		96	2095	58	15
		97	1809	60	11
	M	93	3268	175	54
		94	3131	149	53
		95	3061	170	46
		96	2776	137	41
		97	2426	132	35

Number of Occupants with Fatal or Serious Injuries by Age, Gender and Occupant Type					
Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
35-54yr	F	93	1937	67	14
		94	1995	91	6
		95	2132	89	6
		96	2016	81	11
		97	1807	72	14
	M	93	2121	155	46
		94	2163	167	55
		95	2236	198	51
		96	2172	196	43
		97	2004	162	54
55-64yr	F	93	442	21	2
		94	463	18	2
		95	492	22	0
		96	423	16	1
		97	383	11	2
	M	93	409	27	8
		94	411	29	10
		95	414	28	9
		96	411	44	7
		97	409	33	7
65-69yr	F	93	214	6	0
		94	212	14	2
		95	225	8	1
		96	205	7	0
		97	160	9	1
	M	93	190	17	6
		94	168	15	4
		95	189	17	1
		96	153	19	5
		97	150	14	4

Number of Occupants with Fatal or Serious Injuries by Age, Gender and Occupant Type					
Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
70-74yr	F	93	186	14	0
		94	221	12	0
		95	218	9	0
		96	170	11	0
		97	163	10	1
	M	93	146	15	1
		94	147	8	1
		95	160	17	1
		96	163	12	3
		97	140	18	1
75-79yr	F	93	210	8	0
		94	198	11	0
		95	201	7	1
		96	193	7	0
		97	177	6	1
	M	93	119	7	3
		94	122	15	2
		95	163	11	2
		96	119	8	1
		97	121	10	3
80-84yr	F	93	104	5	0
		94	112	12	0
		95	130	9	0
		96	135	4	0
		97	113	5	0
	M	93	84	9	0
		94	93	4	1
		95	85	7	2
		96	114	12	2
		97	93	10	3

**Number of Occupants with Fatal or Serious Injuries by  
Age, Gender and Occupant Type**

Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
85-89yr	F	93	38	4	0
		94	54	4	0
		95	53	3	0
		96	49	3	0
		97	63	5	0
	M	93	45	6	1
		94	45	6	2
		95	46	3	0
		96	40	5	0
		97	53	4	2
90 + yr	F	93	11	0	0
		94	14	0	0
		95	17	0	0
		96	20	0	0
		97	22	5	0
	M	93	16	1	0
		94	14	1	0
		95	12	3	0
		96	16	3	1
		97	9	0	1

**KA Injured Occupants -- Drivers Age 14-18**  
**Number and Rate by Year**

<b>Number and Rate of Fatal and Serious Injuries by Seat Position and Year Drivers Age 14-18</b>			
<i>Seat Position</i>	<i>Year</i>	<i>Number of KA Injuries</i>	<i>Rate per 1000 Licensed Drivers</i>
Driver	93	1247	4.305
	94	1343	4.560
	95	1329	4.374
	96	1242	4.088
	97	1114	3.166
Front Center	93	39	0.135
	94	45	0.153
	95	28	0.092
	96	41	0.135
	97	27	0.077
Front Right	93	507	1.751
	94	610	2.071
	95	543	1.787
	96	553	1.820
	97	506	1.438
Rear Center	93	39	0.135
	94	54	0.183
	95	32	0.105
	96	30	0.099
	97	37	0.105
Rear Left	93	89	0.307
	94	111	0.377
	95	85	0.280
	96	92	0.303
	97	68	0.193
Rear Right	93	85	0.294
	94	151	0.513
	95	101	0.332
	96	102	0.336
	97	85	0.242

As was the case for all drivers, among crashes involving drivers age 14-18, the most common seating positions for occupants who experience KA injuries are the driver and front-right passenger.

While driver injuries show a steady decline from 1994, front-right passenger injuries have not shown a consistent upward or downward pattern. This would suggest that passengers of drivers age 14-18 would make a likely target for intervention. However, it should once again be noted that even a dramatic change in this front-right passenger KA injury count would not likely have much of an impact on the statewide goals.

Number by Age, Sex, and Year

Number of Occupants with Fatal or Serious Injuries by Age, Gender and Occupant Type Drivers age 14-18					
Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
0 yr	F	93	2	0	0
		96	1	0	0
		97	2	0	0
	M	93	1	0	0
		96	2	0	0
1 yr	F	94	1	0	0
		95	3	0	0
	M	94	2	0	0
		95	1	0	0
		96	2	0	0
		97	1	0	0
2 yr	F	94	1	0	0
		95	2	0	0
		97	2	0	0
	M	93	2	0	0
		94	3	0	0
3 yr	F	94	2	0	0
		96	1	0	0
		97	1	0	0
	M	93	1	0	0
		94	1	0	0
		95	4	0	0
		96	1	0	0
4 yr	F	97	2	0	0
		94	1	0	0
		95	2	0	0
		96	1	0	0
	M	93	1	0	0
		94	1	0	0
		97	2	0	0

The data in the accompanying tables shows that most of the occupants of drivers age 14-18 who experience KA crash injuries are age cohorts of the driver. That is, the majority of KA injured occupants in vehicles driven by a driver age 14-18 are between the ages of 10 and 20 years old.

This would suggest that program efforts that target this driver age group would likely do well to consider including program elements that also target passengers of these young drivers.

**Number of Occupants with Fatal or Serious Injuries by  
Age, Gender and Occupant Type  
Drivers age 14-18**

Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
5-9 yr	F	93	5	0	0
		94	6	0	0
		95	4	0	0
		96	9	0	0
		97	3	0	0
	M	93	7	0	0
		94	8	0	0
		95	2	0	0
		96	4	0	0
		97	8	0	0
10-15yr	F	93	167	36	6
		94	207	35	8
		95	192	28	9
		96	152	24	12
		97	145	29	4
	M	93	168	29	25
		94	206	36	38
		95	176	42	39
		96	158	35	28
		97	122	29	34
16-20yr	F	93	760	25	5
		94	825	23	2
		95	779	22	9
		96	773	29	3
		97	674	27	4
	M	93	863	32	23
		94	1004	44	21
		95	911	36	21
		96	903	35	18
		97	734	44	29

**Number of Occupants with Fatal or Serious Injuries by  
Age, Gender and Occupant Type  
Drivers age 14-18**

Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
21-34yr	F	93	14	0	0
		94	19	0	0
		95	18	0	0
		96	17	0	0
		97	9	0	0
	M	93	15	0	0
		94	52	0	0
		95	32	0	0
		96	28	0	0
		97	20	0	0
35-54yr	F	93	25	0	0
		94	17	0	0
		95	22	0	0
		96	29	0	0
		97	24	0	0
	M	93	14	0	0
		94	8	0	0
		95	9	0	0
		96	6	0	0
		97	10	0	0
55-64yr	F	93	3	0	0
		94	1	0	0
		95	1	0	0
		96	4	0	0
		97	1	0	0
	M	94	1	0	0
		95	1	0	0
		96	4	0	0
		97	2	0	0

**Number of Occupants with Fatal or Serious Injuries by  
Age, Gender and Occupant Type  
Drivers age 14-18**

Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
65-69yr	F	93	1	0	0
		94	2	0	0
		95	2	0	0
		96	1	0	0
		97	1	0	0
	M	94	1	0	0
		95	2	0	0
97		1	0	0	
70-74yr	F	95	1	0	0
	M	96	1	0	0
75-79yr	F	93	1	0	0
		96	1	0	0
	M	93	1	0	0
		95	1	0	0
		97	1	0	0
80-84yr	F	96	1	0	0
	M	93	1	0	0
85-89yr	F	97	3	0	0
90 + yr	M	94	1	0	0
		95	1	0	0

**KA Injured Occupants -- Drivers Age 70+**  
**Number and Rate by Year**

<b>Number and Rate of Fatal and Serious Injuries by Seat Position and Year Drivers Age 70+</b>			
<i>Seat Position</i>	<i>Year</i>	<i>Number of KA Injuries</i>	<i>Rate per 1000 Licensed Drivers</i>
Driver	93	691	1.186
	94	728	1.201
	95	772	1.225
	96	750	1.190
	97	720	1.102
Front Center	93	2	0.003
	94	6	0.010
	95	4	0.006
	96	5	0.008
	97	4	0.006
Front Right	93	201	0.345
	94	208	0.343
	95	219	0.347
	96	205	0.325
	97	192	0.294
Rear Center	93	2	0.003
	94	3	0.005
	95	5	0.008
	96	3	0.005
	97	3	0.005
Rear Left	93	8	0.014
	94	14	0.023
	95	13	0.021
	96	10	0.016
	97	9	0.014
Rear Right	93	7	0.012
	94	12	0.020
	95	14	0.022
	96	12	0.019
	97	11	0.017

One can see in this table that there has been little change in the frequency of KA crash injuries to persons occupying vehicles driven by drivers age 70 and over since 1993. This should not be surprising given that this age group comprises the fastest growing segment of drivers in the state.

While it is true that the frequencies and rates among this driving group have changed little, there is a slight downward trend from 1995.

While this group of drivers is small, as was noted earlier, it is growing and should continue to be monitored closely. While the numbers of KA injured persons involved in these crashes is relatively small at this point in time, and would not likely have much of an impact of the statewide traffic safety goals, this may change in the future as this group of drivers becomes more prevalent.

Number by Age, Sex, and Year

Number of Occupants with Fatal or Serious Injuries by Age and Gender Drivers Age 70+			
Age	Sex	Year	Number of KA Injured Occupants
0 yr	F	94	1
2 yr	F	95	1
		97	2
3 yr	M	95	1
5-9 yr	F	93	2
		94	1
		95	4
	M	93	2
		94	2
		95	3
10-15yr	F	96	1
		95	4
		96	3
		97	3
	M	93	3
		95	1
		96	3
16-20yr	F	97	1
		94	3
		96	1
	M	93	1
		94	2
21-34yr	F	97	1
		96	4
		95	5
		94	2
		93	4
	M	93	2
		94	1
		95	1
		96	1
		97	1

As was the case for the young drivers age 14-18, occupants who experience KA injuries in crash-involved vehicles driven by drivers age 70 and above are generally age cohorts of the driver. That is, most KA injured occupants in vehicles with drivers age 70 and above are also age 70 and above, primarily concentrated in the 70-84 year age span.

As was the case for seating position, we can see in this table that there is little evidence of a trend from 1993-1997 in the number of KA injured occupants in these crashes, either increasing or decreasing. This would suggest that this is a likely group for intervention. However, as has so often been the case for this age group of drivers, there are really too few cases in these categories to effect much change in the statewide goal targets even if significant change were affected among these specific groups.

**Number of Occupants with Fatal or Serious Injuries by Age and Gender  
Drivers Age 70+**

<i>Age</i>	<i>Sex</i>	<i>Year</i>	<i>Number of KA Injured Occupants</i>
35-54yr	F	93	10
		94	7
		95	13
		96	16
		97	10
	M	93	1
		94	4
		95	4
		96	3
		97	8
55-64yr	F	93	12
		94	12
		95	12
		96	10
		97	5
	M	93	5
		94	2
		95	4
		96	1
		97	1
65-69yr	F	93	30
		94	26
		95	24
		96	30
		97	11
	M	93	3
		94	2
		95	2
		96	1
		97	3

**Number of Occupants with Fatal or Serious Injuries by Age and Gender  
Drivers Age 70+**

<i>Age</i>	<i>Sex</i>	<i>Year</i>	<i>Number of KA Injured Occupants</i>
70-74yr	F	93	150
		94	183
		95	188
		96	133
		97	136
	M	93	131
		94	134
		95	140
		96	145
		97	134
75-79yr	F	93	173
		94	169
		95	167
		96	169
		97	148
	M	93	111
		94	114
		95	153
		96	111
		97	110
80-84yr	F	93	88
		94	98
		95	96
		96	114
		97	97
	M	93	77
		94	86
		95	81
		96	106
		97	89

**Number of Occupants with Fatal or Serious Injuries by Age and Gender  
Drivers Age 70+**

<i>Age</i>	<i>Sex</i>	<i>Year</i>	<i>Number of KA Injured Occupants</i>
85-89yr	F	93	26
		94	44
		95	39
		96	37
		97	46
	M	93	41
		94	44
		95	43
		96	37
		97	46
90 + yr	F	93	6
		94	7
		95	7
		96	14
		97	14
	M	93	14
		94	7
		95	8
		96	14
		97	6

**'Had-Been Drinking' KA Crashes — All Drivers**  
**Number and Rate by Year**

<b>Number and Rate of Fatal or Serious Injury 'Had-Been-Drinking' Crashes</b>					
<b>Year</b>	<b>Number of Crashes</b>	<b>Rate per 100 Million VMT</b>	<b>Rate per 1000 Registered Vehicles</b>	<b>Rate per 1000 Population</b>	<b>Rate per 1000 Licensed Drivers</b>
93	3,384	3.949	0.439	0.358	0.519
94	3,294	3.866	0.417	0.347	0.499
95	3,198	3.731	0.397	0.335	0.479
96	2,781	3.172	0.337	0.291	0.417
97	2,635	2.953	0.315	0.275	0.386

This table shows that KA crashes in which the police officer recorded that a least one driver "had-been-drinking" (henceforth denoted as KA-HBD crashes) have declined steadily since 1993. However, a larger than average decline is noted between 1995-96.

Number and Rate by Age, Sex and Year

<b>Fatal or Serious Injury Crash Frequency and Rates                      'Had-Been-Drinking' Crashes                      by Year, Age Group and Sex</b>					
<i>Age</i>	<i>Sex</i>	<i>Year</i>	<i>Number of Crashes</i>	<i>Rate per 1000 Population</i>	<i>Rate per 1000 Licensed Drivers</i>
16-20 yrs.	F	93	60	0.184	0.238
		94	59	0.181	0.232
		95	56	0.170	0.215
		96	64	0.190	0.246
		97	37	0.095	0.138
	M	93	303	0.907	1.121
		94	291	0.871	1.075
		95	296	0.873	1.080
		96	250	0.713	0.912
		97	221	0.616	0.779
21-34 yrs.	F	93	306	0.298	0.321
		94	306	0.301	0.324
		95	271	0.271	0.292
		96	261	0.268	0.281
		97	225	0.244	0.251
	M	93	1402	1.390	1.473
		94	1280	1.295	1.359
		95	1247	1.284	1.342
		96	1007	1.057	1.084
		97	1035	1.067	1.140
35-54 yrs.	F	93	200	0.153	0.160
		94	179	0.133	0.139
		95	215	0.156	0.163
		96	206	0.150	0.156
		97	176	0.123	0.129
	M	93	845	0.667	0.689
		94	822	0.632	0.652
		95	849	0.635	0.658
		96	763	0.558	0.591
		97	744	0.563	0.555

Fatal or Serious Injury Crash Frequency and Rates 'Had-Been-Drinking' Crashes by Year, Age Group and Sex					
Age	Sex	Year	Number of Crashes	Rate per 1000 Population	Rate per 1000 Licensed Drivers
55-69 yrs.	F	93	20	0.033	0.038
		94	11	0.019	0.021
		95	20	0.034	0.038
		96	8	0.014	0.015
		97	17	0.030	0.031
	M	93	125	0.234	0.244
		94	100	0.188	0.195
		95	142	0.268	0.276
		96	112	0.212	0.218
		97	117	0.213	0.222
70+ yrs.	F	93	6	0.012	0.020
		94	2	0.004	0.006
		95	2	0.004	0.006
		96	1	0.002	0.003
		97	5	0.011	0.014
	M	93	28	0.092	0.102
		94	30	0.096	0.105
		95	28	0.088	0.095
		96	37	0.113	0.125
		97	26	0.097	0.085

The preceding table shows that male drivers (age 16-54) are the most significant 'at-risk' group for KA-HBD crash involvement because of their high frequency and rates of involvement. Within that rather large group, we can see that males age 21-34 have the largest number of crashes and highest rates of KA-HBD crash involvement. While the rates of involvement are not nearly so high, a considerable number of KA-HBD crashes involve male drivers age 35-54. Taken as a whole, the male driver age 21-54 represents the majority of the KA-HBD crash experience in Michigan. If inroads are to be made in achieving Michigan's traffic safety performance goals, it would seem that this is a target group that should not be ignored.

Number and Rate by Age, Sex and Year (Pedestrians and Bicyclists)

Number of 'Had-Been-Drinking' Bicyclists and Pedestrians with Fatal or Serious Crash Injuries -- by Age Group, Gender, and Year				
Age Group	Gender	Year	Bicyclists	Pedestrians
10-15 yr.	F	93	0	1
		94	0	0
		95	0	0
		96	0	1
		97	0	0
	M	93	0	1
		94	0	0
		95	0	1
		96	0	0
		97	0	0
16-20 yr.	F	93	0	1
		94	0	1
		95	0	2
		96	0	2
		97	0	1
	M	93	0	6
		94	1	6
		95	1	13
		96	2	10
		97	0	11

**Number of 'Had-Been-Drinking' Bicyclists and Pedestrians with Fatal or Serious Crash Injuries -- by Age Group, Gender, and Year**

<i>Age Group</i>	<i>Gender</i>	<i>Year</i>	<i>Bicyclists</i>	<i>Pedestrians</i>
21-34 yr.	F	93	2	14
		94	2	13
		95	0	16
		96	1	11
		97	0	6
	M	93	7	47
		94	9	41
		95	10	57
		96	10	35
		97	4	36
35-54 yr.	F	93	0	9
		94	0	11
		95	1	12
		96	1	15
		97	1	12
	M	93	9	43
		94	15	34
		95	11	51
		96	10	58
		97	4	60

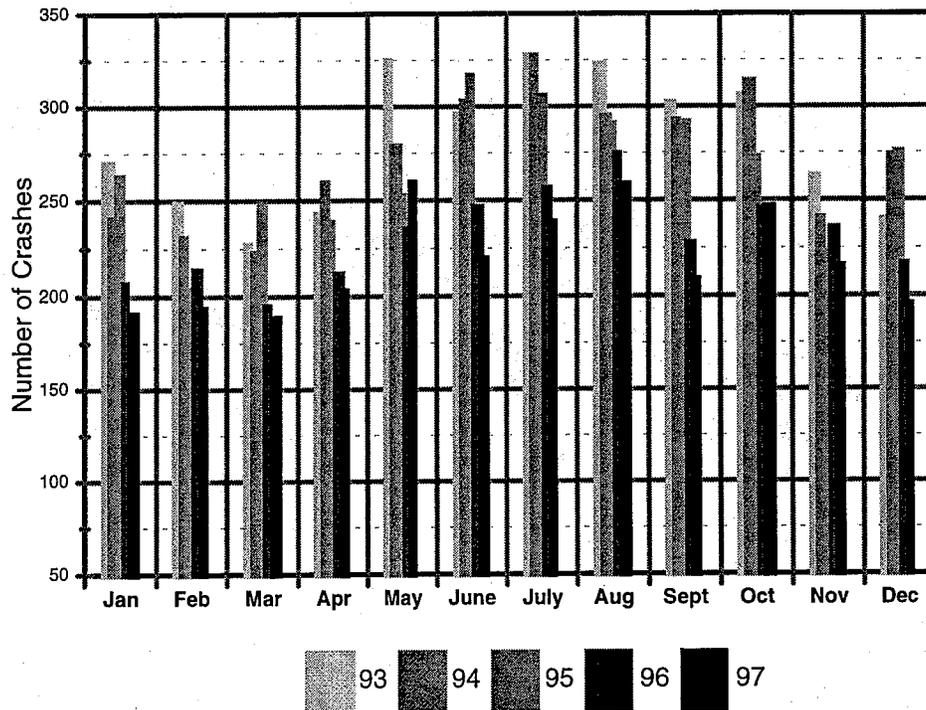
**Number of 'Had-Been-Drinking' Bicyclists and Pedestrians with Fatal or Serious Crash Injuries -- by Age Group, Gender, and Year**

<i>Age Group</i>	<i>Gender</i>	<i>Year</i>	<i>Bicyclists</i>	<i>Pedestrians</i>
55-64 yr.	F	93	0	1
		94	0	0
		95	0	1
		96	0	0
		97	0	1
	M	93	0	6
		94	0	8
		95	0	11
		96	3	9
		97	20	7
65-69 yr.	F	93	0	0
		94	0	1
		95	0	0
		96	0	0
		97	0	0
	M	93	0	1
		94	0	1
		95	0	5
		96	0	5
		97	0	1

The preceding table is included in this report to assist in program planning for a specific program area request. While any death or injury is unfortunate, even tragic, the fact is that there are too few of these types of crashes to warrant targeting significant resources.

## Number by Month and Year

Number of Fatal or Serious Injury 'Had-Been-Drinking' Crashes by Month and Year



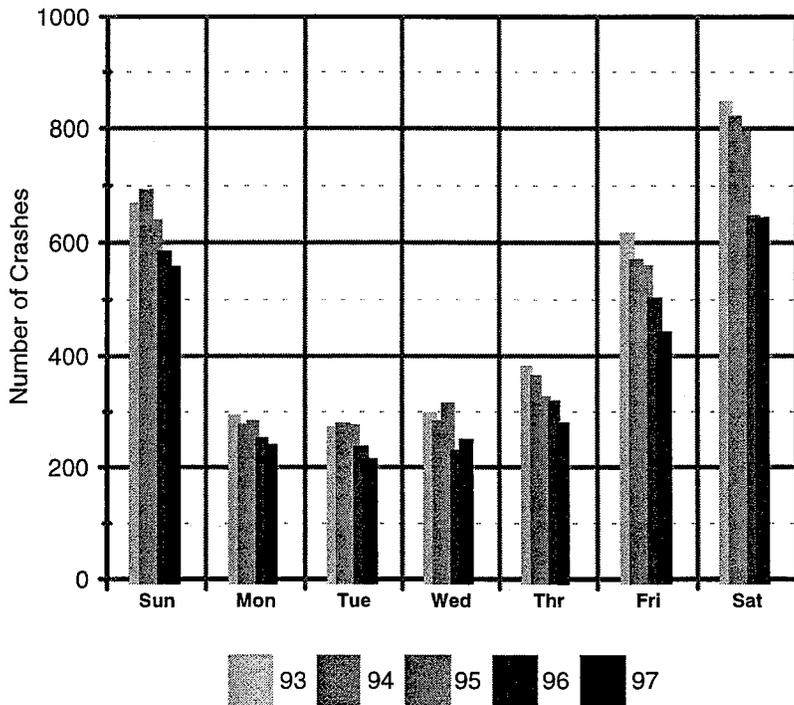
This chart shows an interesting phenomena that is repeated in the day of the week chart that follows. Specifically, it would appear that the largest reductions in KA-HBD crashes have occurred on months that have had the historic highs. In addition, the effect seems to be toward leveling off the month-to-month variation. One interpretation of this observation is that new laws and the efforts of OHSP and others have exerted their influence mainly during the periods that have been targeted for emphasis, namely the problem periods around certain events and holidays. While this is probably true (and everyone involved should take a bow), there may be another interpretation lurking here that has significant implications for future planning.

If in fact we are observing a flattening of the seasonal change that normally occurs from month-to-month, we may also be beginning to see the boundaries of the "hard-core" problem with respect to KA-HBD crashes. What I mean is that we may be seeing reductions in crashes caused by seasonal or occasional indulgence that can be controlled relatively easily through PI&E backed up by enforced laws, leaving us crashes caused by a group of persons for whom these pleas go unheeded. It also suggests that in addition to maintaining current PI&E and accompanying enforcement efforts (which will likely be necessary to prevent backsliding), new efforts targeting this less malleable group will be necessary to gain new change. If this were true, we would also see it in the day of week data, with frequencies of KA-HBD crashes that occur on the weekend declining at greater rates than weekdays.

Number of Fatal or Serious 'Had-Been-Drinking' Crashes by Day of Week and Year

**Number by Day of Week and Year**

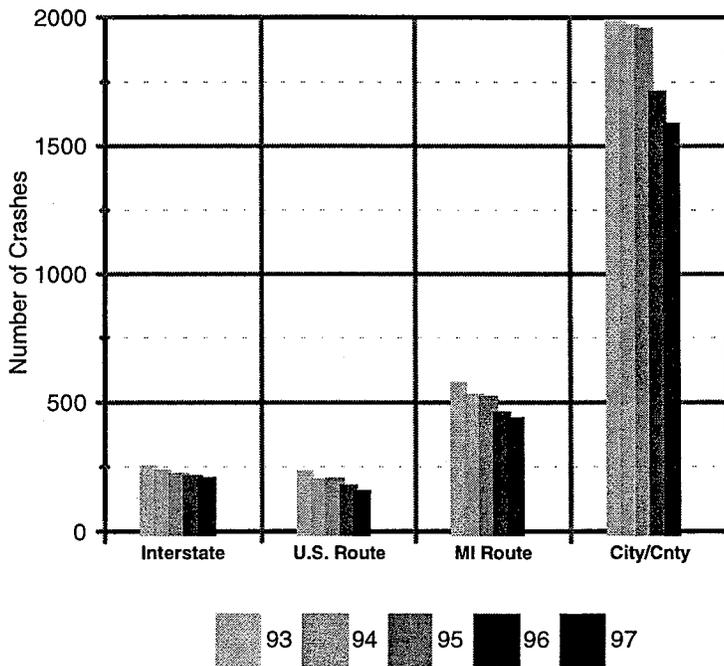
As was the case for the chart showing KA-HBD crashes by month, this chart shows relatively large reductions in crashes on Friday, Saturday, and Sunday compared to the other days of the week. While one could expect the highest days to change the most, the fact that such small change was observed on Monday and Tuesday bolsters the argument that we may be beginning to see the boundaries of a hard-to-reach segment that will at least require continued close scrutiny.



Number of Fatal or Serious 'Had-Been-Drinking' Crashes by Highway Class and Year

**Number by Highway Class and Year**

The most dramatic changes in crashes have been seen on the city/county roads, but downward change can be seen on all road types. Special program emphasis should be paid to KA-HBD crashes on the city/county roads because of the large number of crashes that occur on these roads.



Parallel charts and tables have been prepared for had-been-drinking crashes where the driver was either (1) age 14-18 or (2) was age 70+ and these are presented on the following pages. Because of the low number of cases that these groups experience, they do not represent significant targets for OHSP plans to achieve their statewide performance goals. These data are presented for completeness and program interest.

**'Had-Been Drinking' KA Crashes — Drivers Age 14-18**  
**Number and Rate by Year**

<b>Number and Rate of Fatal and Serious 'Had-Been-Drinking' Crashes by Year Drivers Age 14-18</b>			
	<i>Year</i>	<i>Number of Crashes</i>	<i>Rate per 1000 Licensed Drivers</i>
<i>Driver Age 14-18</i>	93	166	0.573
	94	167	0.567
	95	153	0.504
	96	147	0.484
	97	116	0.330

Number and Rate by Age, Sex, and Year

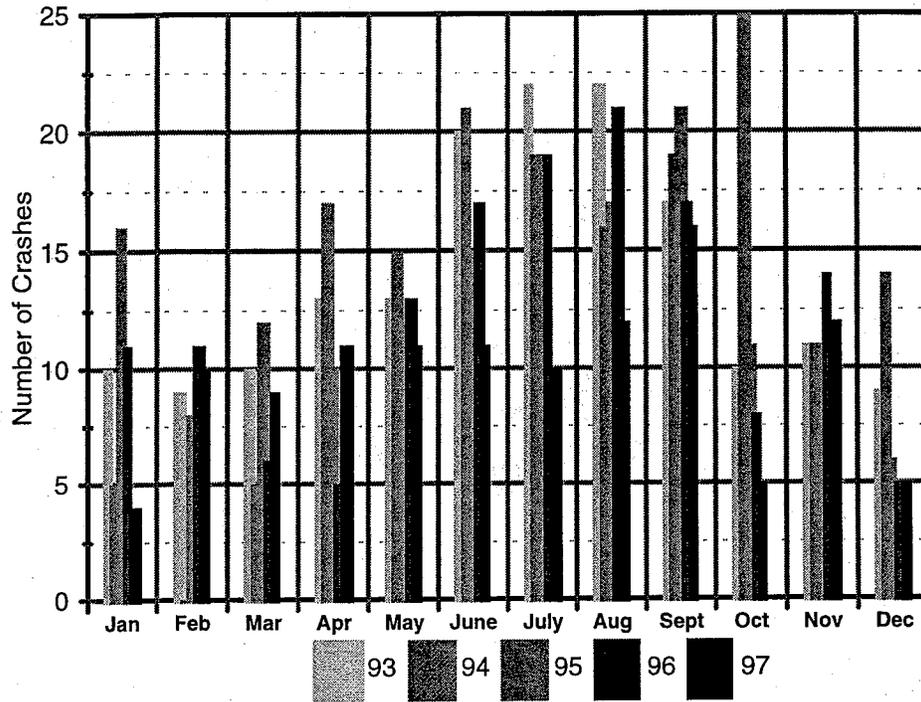
**Number and Rate of Fatal or Serious Injury 'Had-Been-Drinking' Crashes by Driver Age, Gender and Year -- Drivers Age 14-18**

<b>Age</b>	<b>Sex</b>	<b>Year</b>	<b>Number of Crashes</b>	<b>Rate per 1000 Licensed Drivers</b>
14	F	93	4	13.889
		94	2	6.826
		95	1	3.984
		96	2	7.968
		97	1	0.048
	M	93	1	0.536
		94	4	2.278
		95	0	0
		96	1	0.653
		97	4	0.189
16	F	93	13	0.333
		94	3	0.075
		95	3	0.072
		96	7	0.168
		97	6	0.142
	M	93	20	0.482
		94	20	0.486
		95	19	0.442
		96	13	0.302
		97	15	0.339
17	F	93	8	0.167
		94	16	0.319
		95	5	0.098
		96	13	0.255
		97	5	0.095
	M	93	45	0.885
		94	46	0.869
		95	45	0.854
		96	35	0.664
		97	29	0.527
18	F	93	10	0.191
		94	15	0.286
		95	16	0.291
		96	12	0.218
		97	12	0.213
	M	93	64	1.145
		94	60	1.069
		95	63	1.076
		96	63	1.076
		97	41	0.694

# Number by Month and Year

## Number of Fatal or Serious Injury 'Had-Been-Drinking' Crashes by Month and Year

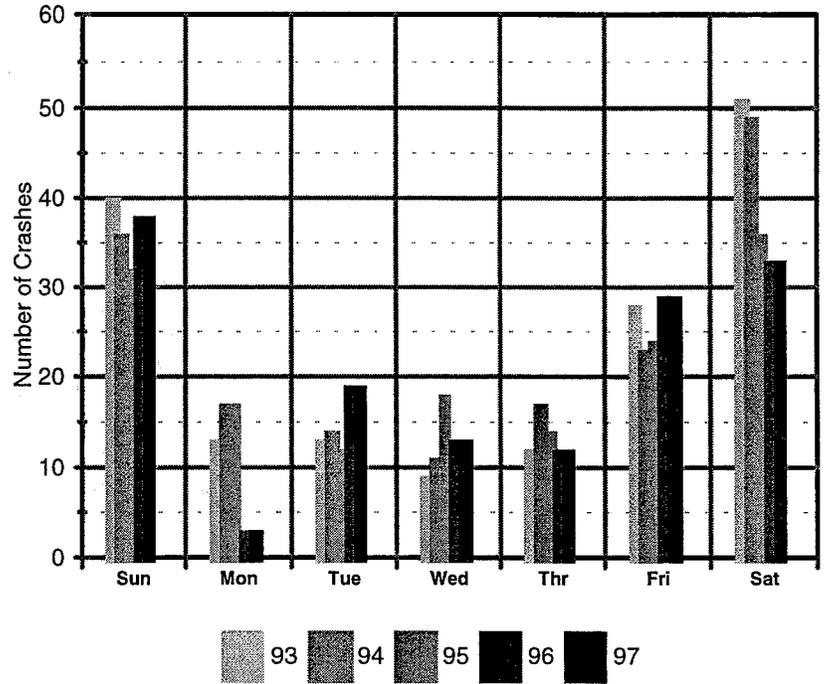
Drivers Age 14-18



**Number by Day of Week and Year**

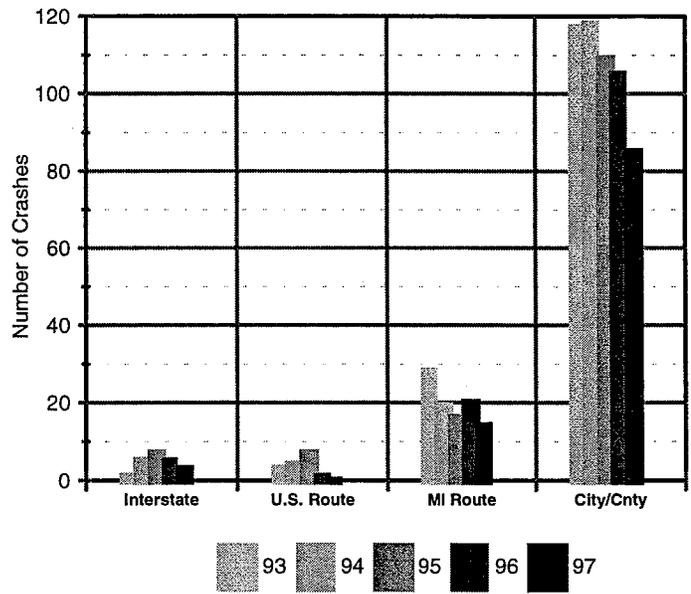
**Number of Fatal or Serious Injury 'Had-Been-Drinking' Crashes by Day of Week and Year**

Drivers Age 14-18



**Number by Highway Class and Year**

**Fatal and Serious Injury Crashes by Highway Class and Year: Age 14-18**



**'Had-Been Drinking' KA Crashes — Drivers Age 70+**  
Number and Rate by Year

<b>Number and Rate of Fatal and Serious 'Had-Been-Drinking' Crashes by Year Drivers Age 70+</b>			
<i>Driver Age 70+</i>	<i>Year</i>	<i>Number of Crashes</i>	<i>Rate per 1000 Licensed Drivers</i>
	93	35	0.573
	94	33	0.054
	95	30	0.048
	96	40	0.063
	97	31	0.047

Number and Rate by Age, Sex, and Year

Fatal or Serious Injury Crash Frequency and Rate -- 'Had-Been-Drinking' Crashes by Year, Age Group, and Sex				
Age	Sex	Year	Number of Crashes	Rate per 1000 Licensed Drivers
70	F	93	4	0.029
		94	0	0.000
		95	1	0.007
		96	0	0.000
		97	4	0.028
	M	93	15	0.119
		94	14	0.108
		95	10	0.075
		96	19	0.143
		97	17	0.127
75	F	93	1	0.010
		94	1	0.010
		95	1	0.010
		96	1	0.010
		97	0	0.000
	M	93	6	0.072
		94	9	0.105
		95	14	0.157
		96	6	0.067
		97	6	0.064
80	F	93	1	0.020
		94	1	0.018
		95	0	0.000
		96	0	0.000
		97	1	0.016
	M	93	7	0.159
		94	6	0.128
		95	3	0.060
		96	9	0.181
		97	2	0.038

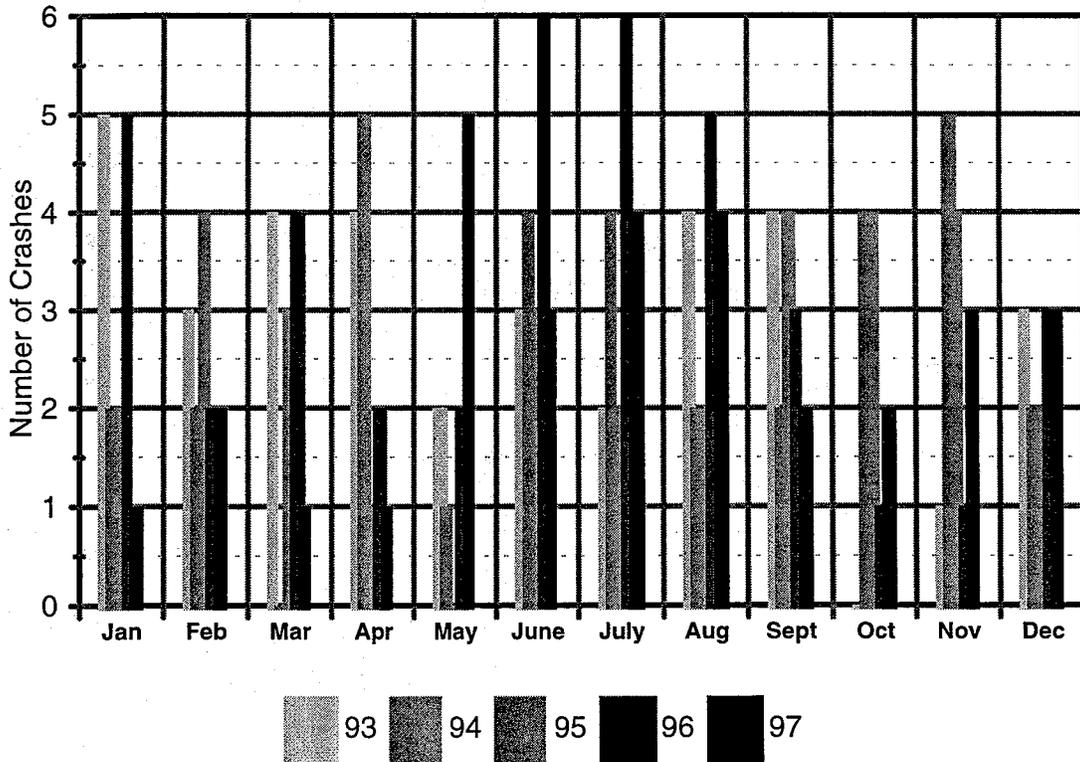
**Fatal or Serious Injury Crash Frequency  
and Rate -- 'Had-Been-Drinking' Crashes  
by Year, Age Group, and Sex**

<i>Age</i>	<i>Sex</i>	<i>Year</i>	<i>Number of Crashes</i>	<i>Rate per 1000 Licensed Drivers</i>
85	F	93	0	0.000
		94	0	0.000
		95	0	0.000
		96	0	0.000
		97	0	0.000
	M	93	0	0.000
		94	0	0.000
		95	1	0.052
		96	2	0.104
		97	1	0.049
90	F	93	0	0.000
		94	0	0.000
		95	0	0.000
		96	0	0.000
		97	0	0.000
	M	93	0	0.000
		94	1	0.236
		95	0	0.000
		96	0	0.000
		97	0	0.000
95	F	93	0	0.000
		94	0	0.000
		95	0	0.000
		96	0	0.000
		97	0	0.000
	M	93	0	0.000
		94	0	0.000
		95	0	0.000
		96	1	1.786
		97	0	0.000

Number by Month and Year

Number of Fatal or Serious Injury 'Had-Been-Drinking'  
Crashes by Month and Year

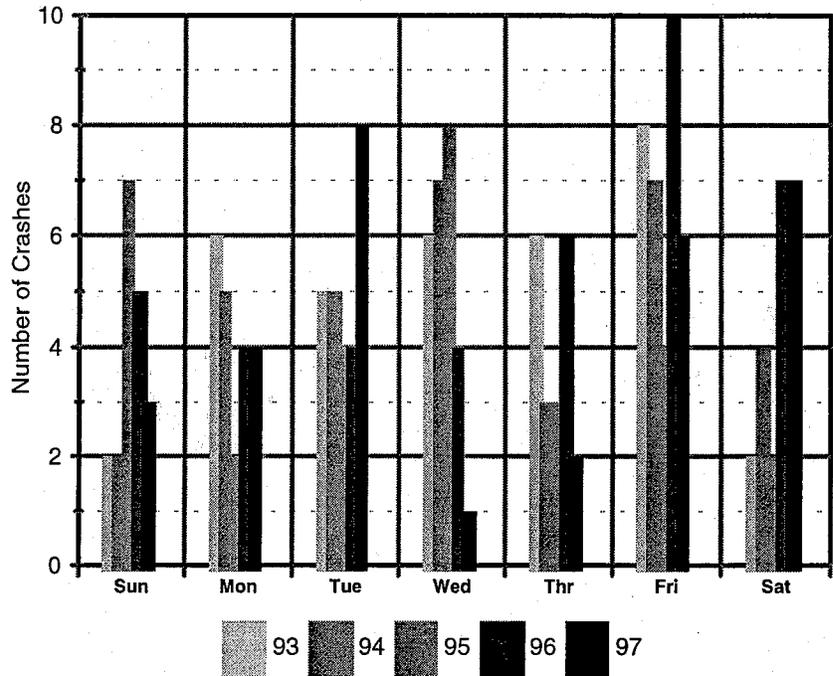
Drivers Age 70+



**Number by Day of Week and Year**

**Number of Fatal or Serious Injury 'Had-Been-Drinking' Crashes by Day of Week and Year**

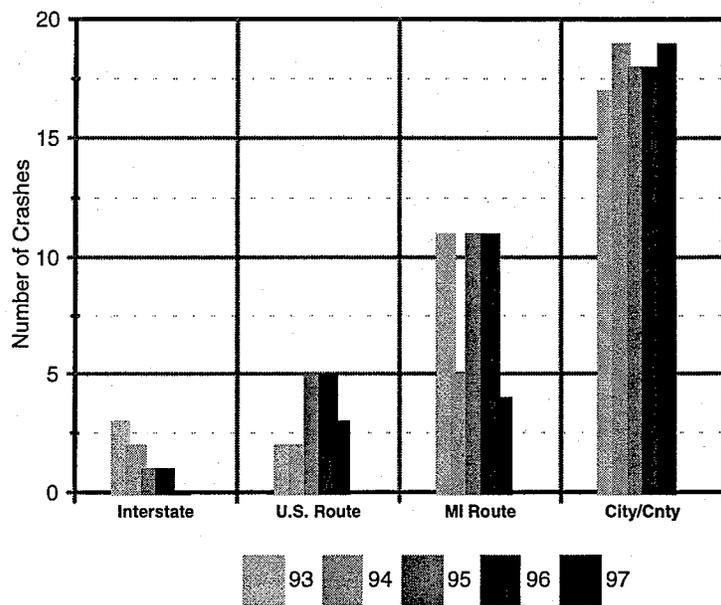
Drivers Age 70+



**Number by Highway Class and Year**

**Number of Fatal or Serious Injury 'Had-Been-Drinking' Crashes by Highway Class and Year**

Drivers Age 70+



**KA Injured Occupants — 'Had-Been Drinking' Crashes**  
 Number by Age, Sex, and Year

Number of Occupants with Fatal or Serious Injuries from 'Had-Been-Drinking' Crashes by Age, Gender, and Occupant Type					
Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
0 yr	F	93	0	1	0
		94	0	0	0
		95	2	0	0
		96	1	0	0
		97	1	0	0
	M	93	2	0	0
		94	4	0	0
		95	2	1	0
		96	0	1	0
		97	1	0	0
1 yr	F	93	2	0	0
		94	1	0	0
		95	3	0	0
		96	2	0	0
		97	1	0	0
	M	93	3	0	0
		94	2	0	0
		95	3	0	0
		96	3	0	0
		97	2	0	0
2 yr	F	93	2	0	0
		94	4	0	0
		95	2	0	0
		96	3	0	0
		97	0	0	0
	M	93	5	0	0
		94	5	0	0
		95	5	1	0
		96	2	0	0
		97	2	0	0

**Number of Occupants with Fatal or Serious Injuries from 'Had-Been-Drinking'  
Crashes by Age, Gender, and Occupant Type**

Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
3 yr	F	93	3	0	0
		94	4	1	0
		95	6	0	0
		96	3	0	0
		97	3	0	0
	M	93	7	0	0
		94	2	1	0
		95	7	0	0
		96	5	0	0
		97	3	1	0
4 yr	F	93	6	0	1
		94	3	0	1
		95	2	0	0
		96	6	0	1
		97	1	0	0
	M	93	5	2	0
		94	6	0	0
		95	7	0	0
		96	3	0	0
		97	2	0	0
5-9 yr	F	93	9	1	2
		94	20	0	1
		95	25	2	0
		96	14	0	0
		97	14	1	2
	M	93	17	4	2
		94	27	4	2
		95	23	2	3
		96	18	6	3
		97	17	4	2

**Number of Occupants with Fatal or Serious Injuries from 'Had-Been-Drinking'  
Crashes by Age, Gender, and Occupant Type**

Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
10-15yr	F	93	63	2	1
		94	64	1	1
		95	42	6	1
		96	37	5	0
		97	26	4	1
	M	93	34	4	3
		94	75	2	3
		95	37	8	3
		96	30	5	4
		97	25	2	1
16-20yr	F	93	185	6	0
		94	182	4	1
		95	178	5	2
		96	152	5	0
		97	117	3	0
	M	93	395	16	2
		94	402	17	4
		95	351	15	2
		96	336	12	3
		97	319	13	1
21-34yr	F	93	508	21	3
		94	494	19	4
		95	490	23	0
		96	387	14	1
		97	324	9	0
	M	93	1,377	57	11
		94	1,271	63	12
		95	1,208	76	13
		96	1,015	48	11
		97	971	49	6
35-54yr	F	93	308	16	1
		94	311	15	1
		95	343	14	2
		96	304	15	2
		97	269	19	2
	M	93	766	53	11
		94	735	46	18
		95	743	64	13
		96	679	66	11
		97	631	71	20

**Number of Occupants with Fatal or Serious Injuries from 'Had-Been-Drinking' Crashes by Age, Gender, and Occupant Type**

Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
55-64yr	F	93	48	3	0
		94	45	0	0
		95	46	2	0
		96	25	2	0
		97	30	1	0
	M	93	96	7	0
		94	79	9	0
		95	89	11	3
		96	81	11	3
		97	71	8	2
65-69yr	F	93	16	1	0
		94	8	1	0
		95	18	1	0
		96	20	0	0
		97	9	0	0
	M	93	27	3	0
		94	24	3	0
		95	24	7	0
		96	19	6	0
		97	33	1	0
70-74yr	F	93	7	3	0
		94	12	0	0
		95	16	0	0
		96	9	0	0
		97	11	2	0
	M	93	23	0	0
		94	15	0	0
		95	14	2	0
		96	20	1	0
		97	14	4	1
75-79yr	F	93	9	0	0
		94	6	1	0
		95	4	0	0
		96	11	0	0
		97	4	0	0
	M	93	7	0	0
		94	10	1	0
		95	17	2	0
		96	8	1	0
		97	12	1	0

**Number of Occupants with Fatal or Serious Injuries from 'Had-Been-Drinking'  
Crashes by Age, Gender, and Occupant Type**

Occupant Age	Sex	Year	Number of KA Injured Persons		
			Occupants	Pedestrians	Bicyclists
80-84yr	F	93	4	0	0
		94	4	1	0
		95	1	0	0
		96	3	0	0
		97	4	0	0
	M	93	8	2	0
		94	8	1	0
		95	3	0	0
		96	14	1	0
		97	4	0	0
85-89yr	F	93	2	0	0
		94	2	0	0
		95	1	0	0
		97	6	0	0
	M	93	2	0	0
		94	1	0	0
		95	1	0	0
		96	1	1	0
		97	1	1	0
	90+ yr	F	93	1	0
94			2	0	0
96			1	0	0
M		96	2	0	0
		97	1	0	0

## Belts, Bags and Helmets

### Belt Use by Seat Position and Year

<b>Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Seat Position and Year</b>					
<i>Seat Position</i>	<i>Year</i>	<i>Belted</i>	<i>CRD Used</i>	<i>Not Belted</i>	<i>% Belted</i>
Driver	93	14513	0	4539	76.18%
	94	15240	0	4521	77.12%
	95	15848	0	4373	78.37%
	96	15166	0	3580	80.90%
	97	13961	0	3355	80.62%
Passenger	93	3329	113	2713	55.92%
	94	3480	132	2793	56.39%
	95	3722	152	2474	61.03%
	96	3603	150	2159	63.48%
	97	2835	130	1679	63.85%

As can be seen in the adjoining table, belt use is higher for drivers than passengers. For both groups, use has remained about the same for the past two years after three years of increase.

### Air Bag Deployment by Seat Position and Year

<b>Air Bag Deployment in Fatal or Serious Injury Crashes by Seat Position and Year</b>				
	<i>Year</i>	<i>Air Bag Deployed</i>	<i>Air Bag Not Deployed</i>	<i>% of Available Air Bags that Deployed</i>
Driver	93	780	1519	33.93%
	94	1281	1957	39.56%
	95	1977	2883	40.68%
	96	2589	3365	43.48%
	97	2962	3901	43.16%
Passenger	93	34	172	16.50%
	94	98	236	29.34%
	95	251	370	40.42%
	96	379	497	43.26%
	97	369	487	43.11%

The most evident fact from this table is that more crash-involved vehicles are equipped with air bags every year. For the last two years, about 43% of air bags were reported to have deployed in crashes that were sufficiently serious to cause a death or serious injury. This finding further emphasizes the importance of safety belt use since injuries are being sustained in crashes in which air bags do not deploy.

**Motorcycle Helmet Use by Seat Position and Year**

Motorcycle helmet use has remained consistently high since 1993.

<b>Motorcycle Helmet Use in Fatal or Serious Injury Crashes by Seat Position and Year</b>				
	<i>Year</i>	<i>Helmet Worn</i>	<i>Helmet Not Worn</i>	<i>% Wearing Helmet</i>
Driver	93	639	98	86.70%
	94	598	85	87.55%
	95	569	60	90.46%
	96	533	75	87.66%
	97	537	65	89.20%
Passenger	93	96	23	80.67%
	94	85	20	80.95%
	95	80	15	84.21%
	96	77	16	82.80%
	97	76	12	86.36%

**Belt Use by Seat Position, Air Bag Deployment, and Year**

<b>Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Seat Position, Air Bag Deployment, and Year</b>							
	<i>Year</i>	<i>Belted-Bag Deployed</i>	<i>Not Belted-Bag Deployed</i>	<i>% Belt Use-Bag Deployed</i>	<i>Belted-No Deployment</i>	<i>Not Belted-No Deployment</i>	<i>% Belt Use-No Deployment</i>
Driver	93	606	120	83.47%	1179	177	86.95%
	94	993	222	81.73%	1552	222	87.49%
	95	1524	314	82.92%	2287	346	86.86%
	96	2065	339	85.90%	2779	364	88.42%
	97	2291	427	84.29%	3185	450	87.62%
Passenger	93	22	7	75.86%	121	35	77.56%
	94	77	16	82.80%	172	49	77.83%
	95	194	44	81.51%	255	85	75.00%
	96	296	64	82.22%	361	101	78.14%
	97	273	68	80.06%	346	110	75.88%

A consistent pattern can be seen in the table above. For each year (except 1994) belt use was lowest among passengers in crashes in which the bag did not deploy, slightly higher among passengers in crashes in which the bag did deploy, slightly higher still was belt use among drivers in crashes in which the bag deployed, and the highest belt use rate of these groups was for drivers in crashes in which the bag did not deploy. While consistent, these differences are small and may well be due to reporting bias.

The following set of tables are included to provide specific information on where occupants were seated in the vehicle, the extent of their injury (KA injured or not), and their reported belt use. These data are broken out by age and gender as well as year within each seating position to provide a rich resource for program planning efforts.

Belt Use by Occupant Age, Sex, Injury, Seat Position and Year

Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year											
Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
0 yr	Driver/Errors	F	93	3	0	1	75.00%	1	0	0	100.00%
			94	0	0	0	0.00%	2	0	0	100.00%
			96	0	0	0	0.00%	1	0	0	100.00%
			97	1	0	0	100.00%	0	0	0	0.00%
		M	93	1	0	1	50.00%	3	0	0	100.00%
			94	0	0	4	0.00%	6	0	0	100.00%
			95	2	0	0	100.00%	1	0	0	100.00%
	96		0	0	1	0.00%	0	0	0	0.00%	
	Center front	F	94	0	0	0	0.00%	0	0	2	0.00%
			95	0	0	1	0.00%	0	1	0	100.00%
		M	93	0	2	0	100.00%	0	1	2	33.33%
	94		1	0	1	50.00%	0	1	0	100.00%	
	Right front	F	93	0	2	2	50.00%	1	4	1	83.33%
			94	0	3	0	100.00%	1	3	0	100.00%
			95	0	2	3	40.00%	1	3	1	80.00%
			96	2	5	1	87.50%	0	0	1	0.00%
		M	97	0	0	1	0.00%	0	3	0	100.00%
			93	0	5	1	83.33%	0	3	0	100.00%
			94	1	4	4	55.56%	0	3	0	100.00%
			95	1	3	2	66.67%	0	2	1	66.67%
	Left rear	F	96	1	1	2	50.00%	0	5	0	100.00%
			97	0	1	1	50.00%	0	1	0	100.00%
			93	0	1	2	33.33%	0	1	0	100.00%
			94	1	0	1	50.00%	2	4	0	100.00%
		M	95	0	2	0	100.00%	0	3	0	100.00%
			96	1	4	1	83.33%	1	5	0	100.00%
			97	0	1	1	50.00%	0	1	0	100.00%
			93	0	0	2	0.00%	0	2	0	100.00%
	Center rear	F	94	0	0	0	0.00%	0	4	1	80.00%
			95	0	1	1	50.00%	0	1	0	100.00%
			96	0	2	1	66.67%	2	1	0	100.00%
			97	0	3	0	100.00%	0	5	0	100.00%
M		93	0	1	0	100.00%	0	6	0	100.00%	
		94	0	0	0	0.00%	0	5	0	100.00%	
		95	0	1	0	100.00%	1	3	0	100.00%	
		96	0	1	0	100.00%	0	3	0	100.00%	
Right rear	F	97	0	2	0	100.00%	0	1	0	100.00%	
		93	1	0	0	100.00%	0	3	0	100.00%	
		94	1	0	1	50.00%	0	1	1	50.00%	
		95	0	0	0	0.00%	0	4	0	100.00%	
	M	96	0	1	1	50.00%	1	2	0	100.00%	
		97	1	2	0	100.00%	0	1	0	100.00%	
		93	0	2	0	100.00%	0	6	0	100.00%	
		94	0	0	0	0.00%	0	8	0	100.00%	
Right rear	F	95	0	0	1	0.00%	0	2	0	100.00%	
		96	0	1	0	100.00%	0	2	0	100.00%	
		97	0	2	1	66.67%	0	3	0	100.00%	
	M	93	0	3	0	100.00%	0	2	0	100.00%	
		94	0	2	1	66.67%	0	3	0	100.00%	
95	0	3	1	75.00%	1	4	1	83.33%			
96	0	2	0	100.00%	0	7	0	100.00%			
97	0	0	0	0.00%	0	3	0	100.00%			

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
1 yr	Driver/Errors	F	94	0	0	0	0.00%	1	0	0	100.00%
		F	97	0	0	0	0.00%	0	1	0	100.00%
	M	94	0	0	1	0.00%	1	0	0	100.00%	
	Center front	F	93	0	0	0	0.00%	0	1	1	50.00%
			94	0	0	0	0.00%	0	1	2	33.33%
			95	0	0	0	0.00%	1	1	1	66.67%
			96	0	0	1	0.00%	0	0	0	0.00%
			97	0	0	1	0.00%	1	0	0	100.00%
		M	93	0	0	1	0.00%	1	0	1	50.00%
			94	0	0	0	0.00%	0	1	0	100.00%
			95	0	0	1	0.00%	0	2	0	100.00%
	Right front	F	96	1	0	1	50.00%	1	0	0	100.00%
			97	0	0	0	0.00%	1	0	0	100.00%
			93	0	0	1	0.00%	0	0	2	0.00%
			94	1	0	1	50.00%	2	4	0	100.00%
			95	2	0	1	66.67%	1	3	2	66.67%
		M	96	0	2	0	100.00%	0	2	1	66.67%
			97	0	0	0	0.00%	0	2	1	66.67%
			93	1	1	1	66.67%	0	2	1	66.67%
	Left rear	F	94	5	3	1	88.89%	2	2	1	80.00%
			95	0	1	1	50.00%	0	6	1	85.71%
			96	2	1	0	100.00%	0	2	2	50.00%
			97	1	0	1	50.00%	1	1	1	66.67%
			93	0	0	0	0.00%	1	3	0	100.00%
		M	94	1	0	0	100.00%	3	4	0	100.00%
			95	0	2	0	100.00%	1	3	2	66.67%
			96	1	4	0	100.00%	1	4	0	100.00%
	Center rear	F	97	0	0	0	0.00%	1	7	0	100.00%
			93	1	1	1	66.67%	2	3	0	100.00%
			94	1	2	0	100.00%	1	1	0	100.00%
			95	0	1	0	100.00%	0	2	0	100.00%
			96	0	6	0	100.00%	1	1	1	66.67%
		M	97	0	0	0	0.00%	0	9	0	100.00%
			93	1	1	1	66.67%	0	2	0	100.00%
			94	3	0	1	75.00%	1	0	0	100.00%
	Right rear	F	95	0	1	0	100.00%	0	0	0	0.00%
			96	0	0	3	0.00%	1	0	0	100.00%
			97	0	2	0	100.00%	1	4	0	100.00%
			93	2	0	1	66.67%	1	2	0	100.00%
			94	1	2	0	100.00%	0	4	0	100.00%
		M	95	0	4	1	80.00%	1	5	2	75.00%
			96	0	2	2	50.00%	0	1	1	50.00%
97			0	1	0	100.00%	0	1	0	100.00%	
Right rear	F	93	0	0	0	0.00%	1	2	0	100.00%	
		94	4	2	2	75.00%	0	5	2	71.43%	
		95	0	3	0	100.00%	0	2	0	100.00%	
		96	0	2	0	100.00%	1	3	0	100.00%	
		97	1	0	1	50.00%	0	4	1	80.00%	
	M	93	0	2	1	66.67%	1	3	1	80.00%	
		94	0	1	2	33.33%	0	1	0	100.00%	
		95	0	2	0	100.00%	0	8	1	88.89%	
96	1	5	1	85.71%	1	5	0	100.00%			
97	0	0	0	0.00%	2	5	1	87.50%			

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants				
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use	
2 yr	Driver/Errors	F	94	1	0	0	100.00%	1	0	0	100.00%	
		M	95	0	0	1	0.00%	0	0	0	0.00%	
				97	0	0	0	0.00%	0	0	1	0.00%
	Center front	F		93	0	0	1	0.00%	1	0	1	50.00%
				94	0	1	2	33.33%	0	1	0	100.00%
				95	0	0	1	0.00%	2	0	2	50.00%
				96	0	0	0	0.00%	0	1	0	100.00%
		M		93	2	0	4	33.33%	1	1	2	50.00%
				94	0	0	2	0.00%	0	1	0	100.00%
				95	1	0	0	100.00%	0	0	0	0.00%
				96	1	0	1	50.00%	1	0	2	33.33%
				97	0	0	0	0.00%	0	0	1	0.00%
	Right front	F		93	2	0	2	50.00%	2	3	3	62.50%
				94	2	1	0	100.00%	1	1	1	66.67%
				95	1	1	7	22.22%	0	2	1	66.67%
				96	2	0	2	50.00%	3	1	1	80.00%
		M		97	0	0	0	0.00%	1	2	0	100.00%
				93	3	1	1	80.00%	3	2	1	83.33%
				94	4	1	3	62.50%	3	0	2	60.00%
				95	4	2	2	75.00%	0	2	1	66.67%
				96	1	1	2	50.00%	2	0	0	100.00%
				97	2	1	2	60.00%	0	1	1	50.00%
	Left rear	F		93	0	0	0	0.00%	1	2	0	100.00%
				94	1	4	4	55.56%	0	5	2	71.43%
				95	0	1	1	50.00%	5	3	2	80.00%
				96	1	4	2	71.43%	1	3	1	80.00%
		M		97	3	0	1	75.00%	1	4	0	100.00%
				93	1	1	2	50.00%	3	1	1	80.00%
				94	1	1	0	100.00%	0	7	0	100.00%
				95	3	1	1	80.00%	3	1	0	100.00%
			96	3	2	0	100.00%	3	4	0	100.00%	
			97	1	4	0	100.00%	1	1	1	66.67%	
Center rear	F		93	1	0	1	50.00%	0	2	1	66.67%	
			94	1	0	1	50.00%	1	1	0	100.00%	
			95	0	0	2	0.00%	2	3	1	83.33%	
			96	2	0	0	100.00%	0	2	1	66.67%	
	M		97	2	0	0	100.00%	0	3	0	100.00%	
			93	2	2	1	80.00%	1	2	2	60.00%	
			94	1	0	2	33.33%	1	2	0	100.00%	
			95	1	0	1	50.00%	0	2	1	66.67%	
			96	2	0	1	66.67%	0	1	0	100.00%	
			97	0	0	0	0.00%	3	1	0	100.00%	
Right rear	F		93	3	0	1	75.00%	2	3	0	100.00%	
			94	0	2	0	100.00%	2	4	0	100.00%	
			95	0	5	1	83.33%	1	0	0	100.00%	
			96	3	5	0	100.00%	4	1	0	100.00%	
	M		97	0	2	2	50.00%	1	1	0	100.00%	
			93	1	2	3	50.00%	1	1	1	66.67%	
			94	0	0	2	0.00%	3	0	0	100.00%	
			95	2	5	0	100.00%	2	4	0	100.00%	
			96	0	2	2	50.00%	1	2	1	75.00%	
			97	1	1	0	100.00%	2	4	0	100.00%	

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants					
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use		
3 yr	Driver/Errors	F	94	0	0	1	0.00%	0	0	1	0.00%		
			97	1	0	0	100.00%	0	0	0	0.00%		
		M	95	1	0	0	100.00%	0	0	0	0.00%		
			96	1	0	0	100.00%	1	0	0	100.00%		
	Center front	F	97	0	1	0	100.00%	0	0	1	0.00%		
			93	0	0	1	0.00%	3	0	0	100.00%		
			94	0	0	1	0.00%	2	0	0	100.00%		
			95	1	0	2	33.33%	1	0	0	100.00%		
		M	96	1	0	1	50.00%	0	0	1	0.00%		
			97	2	0	0	100.00%	0	0	0	0.00%		
			93	0	0	3	0.00%	1	0	2	33.33%		
			94	4	0	3	57.14%	1	0	0	100.00%		
			95	1	0	0	100.00%	2	0	0	100.00%		
			96	0	0	1	0.00%	2	0	1	66.67%		
			97	2	0	0	100.00%	0	0	0	0.00%		
			Right front	F	93	5	0	6	45.46%	5	0	2	71.43%
	94	7			0	2	77.78%	6	0	2	75.00%		
	95	5			1	5	54.55%	3	0	1	75.00%		
	96	3			0	2	60.00%	5	1	1	85.71%		
	M	97		4	0	3	57.14%	2	1	0	100.00%		
		93		6	1	2	77.78%	8	1	2	81.82%		
		94		5	0	1	83.33%	5	3	1	88.89%		
		95		6	3	5	64.29%	2	2	0	100.00%		
		96		7	2	3	75.00%	5	2	0	100.00%		
		97		4	2	3	66.67%	4	1	2	71.43%		
		Left rear		F	93	0	0	1	0.00%	4	1	1	83.33%
					94	3	0	0	100.00%	3	2	2	71.43%
	95		2		0	3	40.00%	2	0	4	33.33%		
	96		3		0	1	75.00%	3	3	1	85.71%		
	M		97	1	1	0	100.00%	2	0	0	100.00%		
			93	3	2	2	71.43%	2	1	1	75.00%		
			94	3	0	2	60.00%	5	0	0	100.00%		
			95	1	1	1	66.67%	2	4	2	75.00%		
			96	7	0	1	87.50%	5	1	0	100.00%		
			97	1	1	1	66.67%	3	2	0	100.00%		
			Center rear	F	93	0	0	3	0.00%	1	1	0	100.00%
					94	0	0	0	0.00%	2	0	1	66.67%
	95	2			0	0	100.00%	3	0	1	75.00%		
	96	1			1	1	66.67%	1	0	2	33.33%		
	M	97		0	0	2	0.00%	1	1	1	66.67%		
		93		2	2	1	80.00%	0	0	0	0.00%		
		94		0	0	3	0.00%	1	0	0	100.00%		
95		3		2	1	83.33%	0	1	0	100.00%			
96		2		2	1	80.00%	1	0	3	25.00%			
97		0		2	1	66.67%	0	2	0	100.00%			
Right rear		F		93	1	1	0	100.00%	0	0	0	0.00%	
				94	1	2	2	60.00%	2	3	0	100.00%	
	95		2	0	1	66.67%	4	3	1	87.50%			
	96		3	2	2	71.43%	6	2	2	80.00%			
	M	97	1	1	0	100.00%	2	1	0	100.00%			
		93	3	1	4	50.00%	6	1	1	87.50%			
		94	5	1	0	100.00%	2	0	1	66.67%			
		95	4	1	1	83.33%	4	4	1	88.89%			
		96	2	3	2	71.43%	3	3	1	85.71%			
		97	1	1	0	100.00%	4	2	0	100.00%			

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants				
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use	
4 yr	Driver/Errors	F	93	1	0	0	100.00%	1	0	0	100.00%	
			95	0	0	0	0.00%	0	1	0	100.00%	
			96	1	0	0	100.00%	0	0	0	0.00%	
		M	93	0	0	0	0.00%	0	0	1	0.00%	
			95	1	0	0	100.00%	0	0	0	0.00%	
			97	0	0	1	0.00%	0	0	0	0.00%	
	Center front	F	93	1	0	1	50.00%	1	0	0	100.00%	
			94	1	0	2	33.33%	2	0	0	100.00%	
			95	1	0	1	50.00%	1	0	0	100.00%	
			96	1	0	0	100.00%	1	1	0	100.00%	
			97	0	0	0	0.00%	1	0	0	100.00%	
			M	93	1	0	1	50.00%	1	0	0	100.00%
		94		0	0	0	0.00%	3	0	0	100.00%	
		95		1	0	0	100.00%	1	0	0	100.00%	
		96		0	0	2	0.00%	0	0	0	0.00%	
		97		2	0	2	50.00%	0	0	0	0.00%	
		Right front		F	93	4	0	5	44.44%	8	1	1
			94		11	0	2	84.62%	8	0	5	61.54%
	95		10		2	4	75.00%	4	0	2	66.67%	
	96		8		0	2	80.00%	8	0	1	88.89%	
	97		4		0	1	80.00%	5	0	0	100.00%	
	M		93		3	0	1	75.00%	11	0	1	91.67%
			94	16	0	1	94.12%	7	1	2	80.00%	
			95	6	0	0	100.00%	6	0	2	75.00%	
			96	14	0	2	87.50%	5	1	1	85.71%	
			97	4	0	1	80.00%	8	2	0	100.00%	
			Left rear	F	93	4	0	1	80.00%	3	1	0
	94				2	0	2	50.00%	3	3	3	66.67%
	95	1			1	1	66.67%	4	0	0	100.00%	
	96	4			1	3	62.50%	4	1	0	100.00%	
	97	0			2	0	100.00%	2	0	0	100.00%	
	M	93			4	0	1	80.00%	2	0	1	66.67%
		94		5	1	2	75.00%	3	0	1	75.00%	
		95		2	2	0	100.00%	5	2	0	100.00%	
		96		2	0	1	66.67%	4	0	0	100.00%	
		97		3	1	1	80.00%	4	0	1	80.00%	
		Center rear		F	93	3	0	4	42.86%	4	0	0
	94				3	1	2	66.67%	3	0	0	100.00%
	95		0		0	1	0.00%	1	0	1	50.00%	
	96		0		1	2	33.33%	3	0	0	100.00%	
	97		4		0	0	100.00%	1	0	0	100.00%	
	M		93		0	1	0	100.00%	1	0	1	50.00%
94			1	0	2	33.33%	1	0	0	100.00%		
95			1	0	0	100.00%	1	0	1	50.00%		
96			2	0	3	40.00%	2	0	1	66.67%		
97			0	0	0	0.00%	2	0	1	66.67%		
Right rear			F	93	2	0	0	100.00%	4	0	1	80.00%
	94			3	0	2	60.00%	2	0	0	100.00%	
	95	2		0	0	100.00%	4	0	0	100.00%		
	96	4		1	1	83.33%	4	0	1	80.00%		
	97	3		0	2	60.00%	4	1	1	83.33%		
	M	93		6	0	0	100.00%	5	0	1	83.33%	
		94	2	0	0	100.00%	2	1	2	60.00%		
		95	4	0	1	80.00%	3	0	1	75.00%		
		96	1	2	1	75.00%	5	1	1	85.71%		
		97	0	0	0	0.00%	5	2	0	100.00%		

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
5-9 yr	Driver/Errors	F	93	1	1	3	40.00%	1	0	0	100.00%
			94	1	0	1	50.00%	2	0	0	100.00%
			95	1	0	1	50.00%	0	0	0	0.00%
			96	4	0	0	100.00%	0	0	0	0.00%
			97	0	1	0	100.00%	1	0	0	100.00%
		M	93	0	0	1	0.00%	1	0	1	50.00%
			94	1	0	0	100.00%	1	0	0	100.00%
			95	1	0	1	50.00%	0	0	0	0.00%
			96	0	0	0	0.00%	2	0	0	100.00%
	Center front	F	93	2	0	2	50.00%	8	0	3	72.73%
			94	2	0	3	40.00%	1	0	2	33.33%
			95	3	0	5	37.50%	2	0	3	40.00%
			96	3	0	1	75.00%	4	0	3	57.14%
			97	0	0	2	0.00%	8	0	4	66.67%
		M	93	4	0	5	44.44%	3	0	3	50.00%
			94	5	0	3	62.50%	2	0	1	66.67%
			95	3	0	4	42.86%	4	1	3	62.50%
			96	4	0	3	57.14%	5	0	3	62.50%
	Right front	F	93	26	0	15	63.42%	27	0	6	81.82%
			94	27	0	13	67.50%	35	0	9	79.55%
			95	33	1	15	69.39%	40	0	5	88.89%
			96	37	0	6	86.05%	24	0	5	82.76%
			97	20	0	10	66.67%	20	0	5	80.00%
		M	93	23	0	22	51.11%	24	0	12	66.67%
			94	28	0	25	52.83%	26	0	9	74.29%
			95	38	1	19	67.24%	40	0	10	80.00%
			96	33	0	12	73.33%	31	0	9	77.50%
	Left rear	F	93	19	0	7	73.08%	14	0	5	73.68%
			94	12	1	8	61.91%	14	0	6	70.00%
			95	16	0	11	59.26%	19	0	4	82.61%
			96	17	0	6	73.91%	12	0	8	60.00%
			97	18	0	7	72.00%	24	0	5	82.76%
		M	93	12	1	9	59.09%	19	0	9	67.86%
			94	11	0	8	57.90%	14	1	3	83.33%
			95	17	0	10	62.96%	18	0	1	94.74%
			96	12	0	2	85.71%	12	1	7	65.00%
	Center rear	F	93	7	0	4	63.64%	1	0	6	14.29%
			94	4	0	8	33.33%	10	0	2	83.33%
			95	7	0	5	58.33%	9	0	1	90.00%
			96	5	0	4	55.56%	9	2	5	68.75%
			97	8	0	2	80.00%	2	0	3	40.00%
		M	93	5	0	6	45.46%	10	0	3	76.92%
94			4	0	2	66.67%	6	0	11	35.29%	
95			3	0	7	30.00%	8	0	4	66.67%	
96			4	0	4	50.00%	7	1	3	72.73%	
Right rear	F	93	12	0	5	70.59%	20	1	7	75.00%	
		94	8	0	8	50.00%	16	0	6	72.73%	
		95	16	0	4	80.00%	23	2	7	78.13%	
		96	16	0	5	76.19%	16	0	4	80.00%	
		97	10	0	7	58.82%	15	1	4	80.00%	
	M	93	16	0	10	61.54%	10	1	5	68.75%	
		94	23	0	12	65.71%	15	0	8	65.22%	
		95	11	0	11	50.00%	22	1	2	92.00%	
		96	16	0	4	80.00%	22	0	9	70.97%	
97	4	1	7	41.67%	12	0	2	85.71%			

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
10-15yr	Driver/Errors	F	93	5	0	8	38.46%	12	0	2	85.71%
			94	6	0	12	33.33%	20	0	5	80.00%
			95	14	0	13	51.85%	11	0	5	68.75%
			96	9	0	6	60.00%	14	0	0	100.00%
		97	11	0	8	57.90%	11	0	2	84.62%	
		M	93	13	0	14	48.15%	12	1	13	50.00%
			94	15	0	18	45.46%	16	0	9	64.00%
			95	11	0	17	39.29%	15	0	8	65.22%
	96		9	0	12	42.86%	13	0	6	68.42%	
	97	7	1	10	44.44%	13	1	6	70.00%		
	Center front	F	93	6	0	1	85.71%	3	0	6	33.33%
			94	5	0	9	35.71%	3	0	4	42.86%
			95	4	0	11	26.67%	4	0	5	44.44%
			96	2	0	16	11.11%	3	0	8	27.27%
		97	5	0	4	55.56%	3	0	3	50.00%	
		M	93	1	0	2	33.33%	0	0	3	0.00%
			94	1	0	10	9.09%	4	0	4	50.00%
			95	2	0	10	16.67%	5	0	6	45.46%
	96		2	0	4	33.33%	3	0	6	33.33%	
	97	2	0	9	18.18%	3	0	5	37.50%		
	Right front	F	93	89	0	73	54.94%	67	0	19	77.91%
			94	100	1	71	58.72%	68	1	40	63.30%
			95	119	0	62	65.75%	72	0	20	78.26%
			96	89	0	51	63.57%	74	0	18	80.44%
		97	80	0	57	58.39%	53	0	16	76.81%	
		M	93	59	0	47	55.66%	66	0	21	75.86%
			94	73	0	70	51.05%	63	0	30	67.74%
			95	64	0	67	48.86%	59	0	24	71.08%
	96		75	0	46	61.98%	73	0	21	77.66%	
	97	49	0	22	69.01%	57	1	17	77.33%		
	Left rear	F	93	21	0	30	41.18%	9	0	6	60.00%
			94	31	0	23	57.41%	18	0	22	45.00%
			95	15	0	24	38.46%	27	0	11	71.05%
			96	18	0	20	47.37%	14	0	19	42.42%
		97	10	0	16	38.46%	20	0	8	71.43%	
		M	93	9	0	18	33.33%	15	0	16	48.39%
			94	14	0	13	51.85%	15	0	15	50.00%
			95	10	0	18	35.71%	19	0	11	63.33%
	96		19	0	15	55.88%	28	0	15	65.12%	
	97	12	0	5	70.59%	19	0	6	76.00%		
	Center rear	F	93	5	0	14	26.32%	7	0	6	53.85%
			94	7	0	19	26.92%	4	0	11	26.67%
95			4	0	9	30.77%	8	0	8	50.00%	
96			3	0	9	25.00%	6	0	8	42.86%	
97		5	0	19	20.83%	7	0	9	43.75%		
M		93	3	0	7	30.00%	7	0	6	53.85%	
		94	2	0	11	15.39%	4	0	10	28.57%	
		95	4	0	8	33.33%	5	0	4	55.56%	
	96	3	0	9	25.00%	4	0	4	50.00%		
97	7	0	7	50.00%	2	0	4	33.33%			
Right rear	F	93	19	0	32	37.26%	16	0	32	33.33%	
		94	28	0	32	46.67%	20	1	31	40.39%	
		95	26	0	25	50.98%	21	0	15	58.33%	
		96	25	0	17	59.52%	26	0	15	63.42%	
	97	14	0	18	43.75%	22	0	14	61.11%		
	M	93	19	0	12	61.29%	13	0	24	35.14%	
		94	22	0	20	52.38%	18	0	17	51.43%	
		95	21	0	15	58.33%	24	0	3	88.89%	
96		20	0	13	60.61%	29	0	12	70.73%		
97	16	0	11	59.26%	16	1	12	58.62%			

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
16-20yr	Driver/Errors	F	93	530	0	265	66.67%	540	0	73	88.09%
			94	526	1	252	67.65%	570	0	89	86.50%
			95	581	1	258	69.29%	571	0	80	87.71%
			96	590	0	191	75.54%	558	0	56	90.88%
		97	529	0	170	75.68%	517	0	63	89.14%	
		M	93	468	0	395	54.23%	968	0	213	81.96%
			94	497	0	452	52.37%	925	0	224	80.51%
			95	507	0	414	55.05%	1004	0	202	83.25%
	96		525	1	351	59.98%	896	0	155	85.25%	
	97	411	0	328	55.62%	935	0	153	85.94%		
	Center front	F	93	8	0	21	27.59%	3	0	5	37.50%
			94	7	0	15	31.82%	4	0	7	36.36%
			95	10	0	11	47.62%	8	0	6	57.14%
			96	6	0	12	33.33%	3	0	9	25.00%
		97	7	0	8	46.67%	4	0	2	66.67%	
		M	93	1	0	8	11.11%	3	0	3	50.00%
			94	4	0	11	26.67%	4	0	11	26.67%
			95	1	0	7	12.50%	2	1	8	27.27%
	96		2	0	11	15.39%	6	0	2	75.00%	
	97	2	0	7	22.22%	3	0	5	37.50%		
	Right front	F	93	159	0	164	49.23%	106	0	45	70.20%
			94	196	0	161	54.90%	90	0	56	61.64%
			95	160	1	133	54.76%	124	0	42	74.70%
			96	196	0	122	61.64%	89	0	30	74.79%
		97	147	0	111	56.98%	66	0	34	66.00%	
		M	93	109	0	177	38.11%	108	0	73	59.67%
			94	107	0	188	36.27%	101	0	70	59.06%
			95	107	0	159	40.23%	109	0	57	65.66%
	96		125	0	156	44.48%	108	0	69	61.02%	
	97	102	0	122	45.54%	92	0	48	65.71%		
	Left rear	F	93	12	0	18	40.00%	13	1	16	46.67%
			94	10	0	26	27.78%	8	0	17	32.00%
			95	16	0	15	51.61%	11	0	12	47.83%
			96	13	0	23	36.11%	10	0	8	55.56%
		97	9	0	17	34.62%	9	0	10	47.37%	
		M	93	15	0	32	31.92%	6	1	23	23.33%
94			5	1	24	20.00%	14	0	26	35.00%	
95			12	0	26	31.58%	7	0	24	22.58%	
96	8		0	24	25.00%	15	0	28	34.88%		
97	5	0	20	20.00%	7	1	17	32.00%			
Center rear	F	93	6	0	18	25.00%	1	0	9	10.00%	
		94	3	0	16	15.79%	5	0	9	35.71%	
		95	2	0	20	9.09%	2	0	4	33.33%	
		96	5	0	14	26.32%	2	0	7	22.22%	
	97	3	0	15	16.67%	4	0	2	66.67%		
	M	93	1	1	21	8.70%	3	0	6	33.33%	
		94	2	0	19	9.52%	3	0	10	23.08%	
		95	2	0	12	14.29%	0	0	12	0.00%	
96		5	0	11	31.25%	1	1	5	28.57%		
97	5	0	5	50.00%	1	0	6	14.29%			
Right rear	F	93	7	0	32	17.95%	12	0	13	48.00%	
		94	15	0	42	26.32%	8	0	18	30.77%	
		95	20	0	26	43.48%	11	0	21	34.38%	
		96	13	0	20	39.39%	9	0	13	40.91%	
	97	10	0	19	34.48%	17	0	15	53.13%		
	M	93	14	0	45	23.73%	10	0	37	21.28%	
		94	15	0	51	22.73%	7	0	23	23.33%	
		95	10	0	37	21.28%	19	0	28	40.43%	
96		11	0	41	21.15%	18	0	26	40.91%		
97	6	0	25	19.36%	12	0	21	36.36%			

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
21-34yr	Driver/Errors	F	93	1029	0	434	70.34%	1028	0	151	87.19%
			94	1047	2	437	70.59%	1081	0	128	89.41%
			95	1125	0	384	74.55%	1119	0	101	91.72%
			96	1049	0	344	75.31%	1026	0	99	91.20%
		97	944	0	313	75.10%	1027	0	101	91.05%	
		M	93	933	0	959	49.31%	2005	0	404	83.23%
			94	968	1	884	52.29%	2139	0	413	83.82%
			95	984	2	867	53.21%	2084	0	382	84.51%
	96		956	0	714	57.25%	1953	0	267	87.97%	
	97	770	0	692	52.67%	1724	0	261	86.85%		
	Center front	F	93	9	0	14	39.13%	6	0	4	60.00%
			94	5	0	9	35.71%	6	0	6	50.00%
			95	6	0	10	37.50%	4	0	3	57.14%
			96	11	0	5	68.75%	3	0	2	60.00%
		97	3	0	7	30.00%	5	0	4	55.56%	
		M	93	2	0	18	10.00%	4	0	3	57.14%
			94	5	0	17	22.73%	2	0	6	25.00%
			95	4	0	10	28.57%	5	0	9	35.71%
	96		1	0	9	10.00%	6	0	7	46.15%	
	97	1	0	6	14.29%	1	0	5	16.67%		
	Right front	F	93	241	0	179	57.38%	138	0	54	71.88%
			94	239	0	205	53.83%	104	0	47	68.87%
			95	268	0	171	61.05%	146	0	43	77.25%
			96	222	1	149	59.95%	151	0	36	80.75%
		97	184	0	105	63.67%	97	0	29	76.98%	
		M	93	166	0	250	39.90%	120	0	81	59.70%
			94	155	0	215	41.89%	105	1	99	51.71%
			95	167	0	216	43.60%	108	0	86	55.67%
	96		169	0	165	50.60%	127	0	63	66.84%	
	97	122	0	136	47.29%	102	0	48	68.00%		
	Left rear	F	93	18	0	26	40.91%	8	0	12	40.00%
			94	11	0	15	42.31%	9	0	4	69.23%
			95	12	0	25	32.43%	9	0	15	37.50%
			96	13	0	10	56.52%	9	0	8	52.94%
		97	1	0	9	10.00%	7	0	11	38.89%	
		M	93	8	0	22	26.67%	10	0	14	41.67%
			94	10	0	30	25.00%	5	0	18	21.74%
			95	6	0	13	31.58%	7	0	7	50.00%
	96		9	0	27	25.00%	7	0	9	43.75%	
	97	1	1	13	13.33%	6	0	11	35.29%		
	Center rear	F	93	4	0	6	40.00%	2	0	5	28.57%
			94	3	0	12	20.00%	3	1	5	44.44%
95			5	0	7	41.67%	1	0	4	20.00%	
96			0	0	4	0.00%	0	0	4	0.00%	
97		0	0	6	0.00%	0	0	0	0.00%		
M		93	3	0	10	23.08%	1	1	10	16.67%	
		94	4	0	11	26.67%	3	0	8	27.27%	
		95	0	0	13	0.00%	1	0	8	11.11%	
	96	0	0	10	0.00%	1	0	5	16.67%		
97	2	0	13	13.33%	2	0	4	33.33%			
Right rear	F	93	12	0	20	37.50%	5	0	13	27.78%	
		94	6	0	19	24.00%	7	0	12	36.84%	
		95	10	0	23	30.30%	12	0	6	66.67%	
		96	6	0	16	27.27%	6	0	13	31.58%	
	97	9	0	12	42.86%	9	0	7	56.25%		
	M	93	2	0	34	5.56%	10	0	12	45.46%	
		94	16	0	34	32.00%	11	0	15	42.31%	
		95	14	0	27	34.15%	8	0	15	34.78%	
96		10	0	23	30.30%	7	0	19	26.92%		
97	8	1	20	31.03%	8	0	10	44.44%			

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
35-54yr	Driver/Errors	F	93	1021	0	273	78.90%	952	0	73	92.88%
			94	1083	0	261	80.58%	1029	1	67	93.89%
			95	1165	1	290	80.08%	1102	0	65	94.43%
			96	1116	2	249	81.79%	1045	0	70	93.72%
			97	1041	0	221	82.49%	992	0	47	95.48%
		M	93	790	1	560	58.55%	1763	0	226	88.64%
			94	849	1	601	58.58%	1962	0	208	90.42%
			95	891	0	587	60.28%	2046	0	237	89.62%
			96	957	0	490	66.14%	1934	0	198	90.71%
			97	871	0	457	65.59%	1812	1	143	92.69%
	Center front	F	93	5	0	10	33.33%	3	0	0	100.00%
			94	3	0	6	33.33%	2	0	1	66.67%
			95	5	0	4	55.56%	6	0	2	75.00%
			96	3	0	6	33.33%	1	0	2	33.33%
			97	7	0	4	63.64%	1	0	2	33.33%
		M	93	3	0	5	37.50%	0	0	2	0.00%
			94	2	0	4	33.33%	3	0	0	100.00%
			95	4	0	3	57.14%	4	0	3	57.14%
			96	2	0	3	40.00%	2	0	2	50.00%
			97	0	0	3	0.00%	1	0	0	100.00%
	Right front	F	93	230	0	104	68.86%	107	0	19	84.92%
			94	265	0	110	70.67%	121	0	25	82.88%
			95	273	1	119	69.72%	147	0	33	81.67%
			96	265	0	87	75.28%	135	0	11	92.47%
			97	222	0	67	76.82%	112	0	14	88.89%
		M	93	76	0	102	42.70%	80	0	30	72.73%
			94	99	0	80	55.31%	65	0	24	73.03%
			95	101	0	78	56.43%	71	0	32	68.93%
			96	93	0	101	47.94%	72	0	20	78.26%
			97	76	0	60	55.88%	51	1	16	76.47%
	Left rear	F	93	4	0	10	28.57%	7	0	7	50.00%
			94	8	0	9	47.06%	8	0	2	80.00%
			95	8	0	15	34.78%	12	0	4	75.00%
			96	6	0	6	50.00%	7	0	2	77.78%
			97	11	0	7	61.11%	6	0	2	75.00%
		M	93	4	0	3	57.14%	3	0	2	60.00%
			94	8	0	9	47.06%	2	0	4	33.33%
			95	3	0	10	23.08%	4	0	7	36.36%
			96	4	0	2	66.67%	4	0	4	50.00%
			97	4	0	3	57.14%	4	0	0	100.00%
	Center rear	F	93	2	0	8	20.00%	1	0	1	50.00%
			94	3	0	1	75.00%	3	0	5	37.50%
95			2	0	6	25.00%	2	0	2	50.00%	
96			2	1	3	50.00%	1	0	3	25.00%	
97			1	0	1	50.00%	1	0	2	33.33%	
M		93	0	0	6	0.00%	0	0	2	0.00%	
		94	0	0	1	0.00%	1	0	1	50.00%	
		95	1	0	6	14.29%	1	0	0	100.00%	
		96	1	0	4	20.00%	0	0	1	0.00%	
		97	0	0	3	0.00%	1	0	1	50.00%	
Right rear	F	93	11	0	15	42.31%	12	0	4	75.00%	
		94	15	0	17	46.88%	9	0	9	50.00%	
		95	13	0	11	54.17%	10	0	5	66.67%	
		96	17	1	15	54.55%	9	0	3	75.00%	
		97	9	0	4	69.23%	12	0	9	57.14%	
	M	93	2	0	15	11.77%	6	0	7	46.15%	
		94	4	0	9	30.77%	4	0	9	30.77%	
		95	3	0	11	21.43%	4	0	9	30.77%	
		96	3	0	8	27.27%	8	0	4	66.67%	
		97	6	1	12	36.84%	4	1	2	71.43%	

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
55-64yr	Driver/Errors	F	93	214	0	52	80.45%	211	0	4	98.14%
			94	211	0	45	82.42%	210	0	7	96.77%
			95	221	0	48	82.16%	219	0	11	95.22%
			96	234	0	30	88.64%	203	0	5	97.60%
		97	222	0	34	86.72%	187	0	8	95.90%	
		M	93	189	1	102	65.07%	439	0	48	90.14%
			94	187	1	103	64.61%	461	0	36	92.76%
			95	203	0	103	66.34%	475	0	39	92.41%
	96		197	0	89	68.88%	413	0	31	93.02%	
	97	204	0	78	72.34%	386	0	38	91.04%		
	Center front	F	93	2	0	0	100.00%	2	0	0	100.00%
			94	2	0	1	66.67%	0	0	0	0.00%
			95	4	0	0	100.00%	0	0	0	0.00%
			96	1	0	0	100.00%	1	0	1	50.00%
		97	2	0	0	100.00%	2	0	0	100.00%	
		M	93	0	0	2	0.00%	0	0	2	0.00%
			94	0	0	1	0.00%	1	0	0	100.00%
			95	1	0	1	50.00%	1	0	1	50.00%
	96		1	0	0	100.00%	1	0	0	100.00%	
	97	1	0	0	100.00%	0	0	0	0.00%		
	Right front	F	93	98	0	17	85.22%	39	0	7	84.78%
			94	101	0	26	79.53%	55	0	2	96.49%
			95	118	0	36	76.62%	48	0	3	94.12%
			96	89	0	26	77.39%	41	0	3	93.18%
		97	57	0	12	82.61%	49	0	1	98.00%	
		M	93	24	0	10	70.59%	14	0	2	87.50%
			94	28	0	14	66.67%	15	0	5	75.00%
			95	25	0	10	71.43%	12	0	0	100.00%
	96		31	0	10	75.61%	14	0	2	87.50%	
	97	18	1	6	76.00%	11	0	1	91.67%		
	Left rear	F	93	4	0	8	33.33%	2	0	0	100.00%
			94	7	0	2	77.78%	1	0	2	33.33%
			95	5	0	1	83.33%	6	0	1	85.71%
			96	1	0	5	16.67%	4	0	0	100.00%
		97	2	1	1	75.00%	3	0	1	75.00%	
		M	93	0	0	0	0.00%	1	0	1	50.00%
			94	2	0	0	100.00%	1	0	1	50.00%
			95	3	0	0	100.00%	1	0	0	100.00%
	96		1	0	4	20.00%	1	0	0	100.00%	
	97	0	0	1	0.00%	0	0	0	0.00%		
	Center rear	F	93	0	0	2	0.00%	0	0	2	0.00%
			94	0	0	1	0.00%	0	0	2	0.00%
95			1	0	2	33.33%	1	0	0	100.00%	
96			1	0	2	33.33%	0	0	0	0.00%	
97		1	0	0	100.00%	0	0	1	0.00%		
M		93	0	0	1	0.00%	0	0	1	0.00%	
		94	1	0	1	50.00%	0	0	0	0.00%	
		95	0	0	1	0.00%	0	0	0	0.00%	
	96	0	0	1	0.00%	0	0	0	0.00%		
97	0	0	2	0.00%	0	0	0	0.00%			
Right rear	F	93	7	0	4	63.64%	1	0	1	50.00%	
		94	7	0	5	58.33%	2	0	2	50.00%	
		95	5	0	6	45.46%	2	0	1	66.67%	
		96	3	0	3	50.00%	5	0	1	83.33%	
	97	4	0	2	66.67%	3	0	0	100.00%		
	M	93	0	0	1	0.00%	3	0	2	60.00%	
		94	1	0	1	50.00%	0	0	1	0.00%	
		95	1	0	0	100.00%	2	0	0	100.00%	
96		0	0	0	0.00%	3	0	0	100.00%		
97	2	0	2	50.00%	0	0	0	0.00%			

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
65-69yr	Driver/Errors	F	93	87	0	20	81.31%	77	0	2	97.47%
			94	92	0	23	80.00%	88	0	2	97.78%
			95	107	0	18	85.60%	73	0	4	94.81%
			96	102	0	15	87.18%	77	0	3	96.25%
			97	85	0	18	82.52%	75	0	4	94.94%
		M	93	99	0	45	68.75%	176	0	13	93.12%
			94	96	0	29	76.80%	186	0	16	92.08%
			95	107	0	41	72.30%	189	0	9	95.46%
			96	85	0	33	72.03%	161	0	10	94.15%
	Center front	F	93	0	0	1	0.00%	1	0	0	100.00%
			94	1	0	0	100.00%	0	0	0	0.00%
			96	2	0	0	100.00%	3	0	0	100.00%
	Right front	F	93	55	0	20	73.33%	24	0	1	96.00%
			94	58	0	11	84.06%	23	0	4	85.19%
			95	57	0	11	83.82%	23	0	2	92.00%
			96	55	0	11	83.33%	20	0	1	95.24%
			97	36	0	6	85.71%	22	0	0	100.00%
		M	93	6	0	5	54.55%	4	0	2	66.67%
			94	12	0	4	75.00%	5	0	5	50.00%
			95	4	0	4	50.00%	8	0	1	88.89%
			96	12	0	0	100.00%	3	0	2	60.00%
	Left rear	F	93	3	0	2	60.00%	1	0	0	100.00%
			94	1	0	2	33.33%	3	0	1	75.00%
			95	2	0	3	40.00%	1	0	1	50.00%
			96	1	0	3	25.00%	2	0	2	50.00%
		M	93	0	0	0	0.00%	0	0	0	0.00%
			94	1	0	0	100.00%	1	0	0	100.00%
			95	2	0	2	50.00%	0	0	0	0.00%
	Center rear	F	93	0	0	1	0.00%	2	0	0	100.00%
			94	0	0	0	0.00%	1	0	0	100.00%
			95	0	0	1	0.00%	0	0	0	0.00%
			97	0	0	1	0.00%	0	0	1	0.00%
M		96	0	0	0	0.00%	1	0	0	100.00%	
Right rear	F	93	2	0	3	40.00%	1	0	1	50.00%	
		94	0	0	3	0.00%	1	0	4	20.00%	
		95	3	0	2	60.00%	0	0	0	0.00%	
		96	6	0	0	100.00%	0	0	0	0.00%	
		97	1	0	1	50.00%	4	0	0	100.00%	
	M	93	1	0	0	100.00%	0	0	1	0.00%	
		94	1	0	0	100.00%	0	0	0	0.00%	
		95	1	0	0	100.00%	0	0	1	0.00%	

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
70-74yr	Driver/Errors	F	93	83	0	25	76.85%	67	0	3	95.71%
			94	109	0	20	84.50%	81	0	1	98.78%
			95	115	0	16	87.79%	61	0	2	96.83%
			96	88	0	10	89.80%	74	0	4	94.87%
			97	88	0	16	84.62%	59	0	3	95.16%
		M	93	76	0	32	70.37%	124	0	13	90.51%
			94	74	0	30	71.15%	126	0	4	96.92%
			95	86	0	35	71.07%	145	0	11	92.95%
			96	90	0	31	74.38%	143	0	8	94.70%
			97	85	0	29	74.56%	104	0	9	92.04%
	Center front	F	93	1	0	0	100.00%	0	0	0	0.00%
			94	0	0	1	0.00%	0	0	0	0.00%
			95	2	0	0	100.00%	0	0	1	0.00%
			97	1	0	0	100.00%	0	0	0	0.00%
		M	93	0	0	1	0.00%	1	0	0	100.00%
	Right front	F	93	45	0	11	80.36%	17	0	2	89.47%
			94	50	0	11	81.97%	11	0	1	91.67%
			95	51	0	11	82.26%	27	0	1	96.43%
			96	45	0	4	91.84%	17	0	0	100.00%
			97	36	0	4	90.00%	23	0	2	92.00%
		M	93	6	0	3	66.67%	8	0	4	66.67%
			94	12	0	2	85.71%	11	0	3	78.57%
			95	13	0	8	61.91%	4	0	0	100.00%
			96	13	0	4	76.47%	6	0	0	100.00%
			97	5	0	4	55.56%	7	0	1	87.50%
	Left rear	F	93	0	0	1	0.00%	0	0	1	0.00%
			94	3	0	2	60.00%	0	0	1	0.00%
			95	2	0	1	66.67%	0	0	0	0.00%
			96	1	0	1	50.00%	1	0	0	100.00%
			97	0	0	2	0.00%	0	0	0	0.00%
		M	93	1	0	1	50.00%	0	0	0	0.00%
			94	0	0	0	0.00%	1	0	0	100.00%
	Center rear	F	94	0	0	1	0.00%	0	0	0	0.00%
			95	0	0	1	0.00%	1	0	0	100.00%
		M	94	1	0	0	100.00%	0	0	0	0.00%
	Right rear	F	93	6	0	2	75.00%	0	0	1	0.00%
94			1	0	2	33.33%	2	0	0	100.00%	
95			3	0	4	42.86%	2	0	3	40.00%	
96			3	0	4	42.86%	2	0	0	100.00%	
97			1	0	1	50.00%	1	0	0	100.00%	
M		93	0	0	0	0.00%	0	0	1	0.00%	
		95	1	0	0	100.00%	0	1	0	100.00%	
		96	0	0	1	0.00%	0	0	0	0.00%	
		97	0	0	1	0.00%	0	0	0	0.00%	

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants				
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use	
75-79yr	Driver/Errors	F	93	94	0	19	83.19%	50	0	3	94.34%	
			94	89	0	14	86.41%	44	0	3	93.62%	
			95	101	0	19	84.17%	40	0	1	97.56%	
			96	102	0	13	88.70%	52	0	5	91.23%	
			97	89	0	14	86.41%	55	0	0	100.00%	
		M	93	70	0	23	75.27%	95	0	4	95.96%	
			94	54	0	42	56.25%	108	0	4	96.43%	
			95	95	0	24	79.83%	88	0	8	91.67%	
			96	78	0	20	79.59%	103	0	6	94.50%	
	Center front	F	93	1	0	0	100.00%	1	0	0	100.00%	
			94	3	0	1	75.00%	1	0	0	100.00%	
			95	1	0	0	100.00%	0	0	0	0.00%	
			96	3	0	0	100.00%	0	0	1	0.00%	
			97	1	0	0	100.00%	0	0	0	0.00%	
		M	94	0	0	0	0.00%	1	0	0	100.00%	
			96	1	0	0	100.00%	0	0	0	0.00%	
			93	58	0	17	77.33%	9	0	4	69.23%	
			94	51	0	12	80.95%	9	0	3	75.00%	
	Right front	F	95	50	0	10	83.33%	12	0	1	92.31%	
			96	48	0	13	78.69%	13	0	0	100.00%	
			97	46	0	8	85.19%	13	0	0	100.00%	
			M	93	9	0	2	81.82%	1	0	0	100.00%
				94	8	0	2	80.00%	0	0	0	0.00%
		95		13	0	3	81.25%	7	0	0	100.00%	
		96		11	0	3	78.57%	4	0	0	100.00%	
		Left rear	F	97	6	0	5	54.55%	5	0	1	83.33%
				93	0	0	1	0.00%	0	0	0	0.00%
	94			2	0	1	66.67%	1	0	1	50.00%	
	95			0	0	0	0.00%	3	0	0	100.00%	
	96			0	0	0	0.00%	1	0	0	100.00%	
	M		97	0	0	1	0.00%	1	0	0	100.00%	
			96	1	0	0	100.00%	0	0	0	0.00%	
			94	0	0	1	0.00%	0	0	0	0.00%	
95			1	0	0	100.00%	1	0	0	100.00%		
Center rear	F	93	0	0	0	0.00%	0	0	1	0.00%		
		93	4	0	1	80.00%	2	0	1	66.67%		
		94	1	0	3	25.00%	2	0	2	50.00%		
		95	4	0	3	57.14%	2	0	1	66.67%		
		96	0	0	1	0.00%	1	0	0	100.00%		
	M	97	1	0	2	33.33%	0	0	1	0.00%		
		94	1	0	0	100.00%	0	0	1	0.00%		
		95	0	0	0	0.00%	1	0	0	100.00%		
		96	1	0	0	100.00%	0	0	0	0.00%		
Right rear	F	97	2	0	0	100.00%	0	0	0	0.00%		
		93	4	0	1	80.00%	2	0	1	66.67%		
		94	1	0	3	25.00%	2	0	2	50.00%		
		95	4	0	3	57.14%	2	0	1	66.67%		
		96	0	0	1	0.00%	1	0	0	100.00%		
	M	97	1	0	2	33.33%	0	0	1	0.00%		
		94	1	0	0	100.00%	0	0	1	0.00%		
		95	0	0	0	0.00%	1	0	0	100.00%		
		96	1	0	0	100.00%	0	0	0	0.00%		
97	2	0	0	100.00%	0	0	0	0.00%				

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
80-84yr	Driver/Errors	F	93	47	0	12	79.66%	29	0	3	90.63%
			94	47	0	18	72.31%	27	0	2	93.10%
			95	41	0	17	70.69%	23	0	1	95.83%
			96	69	0	6	92.00%	34	0	3	91.89%
		97	64	0	10	86.49%	27	0	0	100.00%	
		M	93	42	0	22	65.63%	58	0	6	90.63%
			94	54	0	18	75.00%	62	0	5	92.54%
			95	46	0	18	71.88%	74	0	11	87.06%
	96		64	0	23	73.56%	51	0	4	92.73%	
	97	57	0	14	80.28%	44	0	4	91.67%		
	Center front	F	93	1	0	0	100.00%	0	0	0	0.00%
			94	1	0	1	50.00%	0	0	0	0.00%
			95	1	0	0	100.00%	0	0	0	0.00%
		M	96	2	0	0	100.00%	0	0	0	0.00%
			95	1	0	0	100.00%	0	0	0	0.00%
			96	0	0	1	0.00%	0	0	0	0.00%
	Right front	F	93	31	0	8	79.49%	6	0	0	100.00%
			94	24	0	8	75.00%	6	0	0	100.00%
			95	28	0	8	77.78%	12	0	1	92.31%
			96	34	0	10	77.27%	10	0	0	100.00%
		97	16	0	4	80.00%	15	0	0	100.00%	
		M	93	10	0	2	83.33%	5	0	0	100.00%
			94	9	0	1	90.00%	4	0	0	100.00%
			95	4	0	5	44.44%	4	0	0	100.00%
	96		10	0	2	83.33%	4	0	1	80.00%	
	97	6	0	3	66.67%	0	0	0	0.00%		
	Left rear	F	94	2	0	0	100.00%	1	0	0	100.00%
			95	3	0	0	100.00%	1	0	1	50.00%
			96	2	0	0	100.00%	0	0	0	0.00%
			97	3	0	0	100.00%	1	0	0	100.00%
		M	95	0	0	0	0.00%	1	0	0	100.00%
			96	0	0	0	0.00%	0	0	1	0.00%
	Center rear	F	97	1	0	0	100.00%	0	0	0	0.00%
		M	96	0	0	1	0.00%	0	0	0	0.00%
	Right rear	F	93	1	0	0	100.00%	1	0	1	50.00%
			94	1	0	0	100.00%	2	0	0	100.00%
95			1	0	1	50.00%	1	0	1	50.00%	
96			2	0	1	66.67%	1	0	0	100.00%	
97			3	0	0	100.00%	0	0	0	0.00%	
M		94	0	0	1	0.00%	0	0	0	0.00%	
		96	1	0	1	50.00%	0	0	0	0.00%	
		97	0	0	1	0.00%	0	0	0	0.00%	

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants			
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use
85-89yr	Driver/Errors	F	93	14	0	5	73.68%	15	0	0	100.00%
			94	25	0	6	80.65%	6	0	1	85.71%
			95	24	0	8	75.00%	13	0	0	100.00%
			96	16	0	6	72.73%	5	0	0	100.00%
		97	23	0	6	79.31%	13	0	0	100.00%	
		M	93	25	0	10	71.43%	33	0	0	100.00%
			94	19	0	15	55.88%	20	0	4	83.33%
			95	19	0	12	61.29%	26	0	1	96.30%
	96		22	0	9	70.97%	21	0	1	95.46%	
	97	27	0	9	75.00%	23	0	1	95.83%		
	Center front	F	93	1	0	0	100.00%	0	0	0	0.00%
			96	0	0	1	0.00%	0	0	0	0.00%
			97	1	0	0	100.00%	0	0	0	0.00%
	Right front	F	93	6	0	8	42.86%	3	0	1	75.00%
			94	16	0	2	88.89%	0	0	1	0.00%
			95	12	0	0	100.00%	6	0	0	100.00%
			96	16	0	6	72.73%	4	0	0	100.00%
		97	16	0	6	72.73%	4	0	0	100.00%	
		M	93	2	0	2	50.00%	3	0	0	100.00%
			94	3	0	2	60.00%	4	0	0	100.00%
			95	3	0	3	50.00%	1	0	0	100.00%
	96		3	0	2	60.00%	0	0	0	0.00%	
	97	5	0	4	55.56%	1	0	1	50.00%		
	Left rear	F	93	0	0	0	0.00%	1	0	0	100.00%
			94	0	0	1	0.00%	0	0	1	0.00%
			95	1	0	0	100.00%	1	0	0	100.00%
			96	0	0	0	0.00%	1	0	0	100.00%
		97	0	0	0	0.00%	0	0	1	0.00%	
M	93	0	0	2	0.00%	0	0	1	0.00%		
Center rear	M	93	1	0	0	100.00%	0	0	0	0.00%	
Right rear	F	93	1	0	0	100.00%	0	0	0	0.00%	
		94	1	0	0	100.00%	0	0	0	0.00%	
		95	0	0	1	0.00%	0	0	0	0.00%	
		96	0	0	1	0.00%	0	0	0	0.00%	
	97	2	0	3	40.00%	0	0	1	0.00%		
M	94	0	0	1	0.00%	0	0	0	0.00%		

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes by Occupant Age, Sex, Injury, Seat Position, and Year**

Age	Occupant Position	Sex	Year	KA Injured Occupants				Not KA Injured Occupants					
				Belt Used	CRD Used	Belt Not Used	% Belt Use	Belt Used	CRD Used	Belt Not Used	% Belt Use		
90 + yr	Driver/Errors	F	93	1	0	0	100.00%	1	0	0	100.00%		
			94	3	0	2	60.00%	2	0	0	100.00%		
			95	4	0	1	80.00%	1	0	1	50.00%		
			96	5	0	0	100.00%	2	0	0	100.00%		
			97	7	0	0	100.00%	1	0	0	100.00%		
		M	93	9	0	2	81.82%	6	0	0	100.00%		
			94	4	0	2	66.67%	5	0	1	83.33%		
			95	3	0	1	75.00%	12	0	0	100.00%		
	Center front	F	96	3	0	2	60.00%	7	0	1	87.50%		
	Right front	F	96	0	0	0	0.00%	11	0	0	100.00%		
			93	2	0	2	50.00%	1	0	0	100.00%		
			94	4	0	2	66.67%	2	0	2	50.00%		
			95	9	0	0	100.00%	1	0	0	100.00%		
			96	6	0	4	60.00%	2	0	0	100.00%		
		M	97	7	0	3	70.00%	1	0	0	100.00%		
			93	1	1	1	66.67%	1	0	0	100.00%		
			94	3	0	3	50.00%	1	0	0	100.00%		
			95	1	0	1	50.00%	1	0	0	100.00%		
			96	2	0	0	100.00%	3	0	0	100.00%		
			97	3	0	1	75.00%	1	0	0	100.00%		
			Left rear	F	93	1	0	0	100.00%	0	0	0	0.00%
					96	1	0	0	100.00%	0	0	0	0.00%
	97	1			0	1	50.00%	1	0	0	100.00%		
	Right rear	F	93	0	0	1	0.00%	0	0	0	0.00%		
94			0	0	1	0.00%	0	0	0	0.00%			
96			1	0	1	50.00%	0	0	0	0.00%			
M		95	0	0	1	0.00%	0	0	1	0.00%			

